PIONEER®
The Art of Entertainment

Service Manual

- KEH-M650/US

ORDER NO.
CRT1380

MULTI-CD CONTROL FM/AM TUNER DECK AMPLIFIER

KEH-M650 US
KEH-M8200 US
KEH-M8250 CA, ES

Note:
- **See the service manual CX-175 (CRT1276) for the cassette mechanism description.**
- **Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.**

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FK MAY 1991 Printed in Japan

SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

SPECIFICATIONS

General
Power source ..... 14.4 V DC (10.8 – 15.6 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 7.5 A
Dimensions (chassis) ..... 178(W) × 50(H) × 150(D) mm
[7(W) × 2(H) × 5-7/8(D) in.]
(nose) ..... 188(W) × 58(H) × 18(D) mm
[7-3/8(W) × 2-1/4(H) × 3/4(D) in.]
Weight ..... 1.6 kg (3.5 lbs.)

Amplifier (KEH-M650/US, KEH-M8200/US, KEH-M8250/CA)

Continuous power output is 10 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output ..... 25 W × 2/15 W × 4 (EIAJ)
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Preout output level/impedance ..... 500 mV/1 kΩ
Tone controls (bass) ..... ±10 dB (100 Hz)
(middle) ..... ±10 dB (1 kHz)
(treble) ..... ±10 dB (10 kHz)
Loudness contour ..... +10 dB (100 Hz), +7 dB (10 kHz) (volume: –30 dB)

Amplifier (KEH-M8250/ES)

Maximum power output ..... 25W × 2/15W × 4 (EIAJ)
Continuous power output ..... 11W × 2 (1% dist. at 1kHz)
Continuous power output is 10W per channel min. into 4 ohms, both channels driven 50 to 15,000Hz with no more than 5% THD.
Load impedance ..... 4Ω (4 – 8Ω allowable)
Max. output level/output impedance (pre out) ..... 500mV/1k Ω
Tone controls (bass) ..... ± 10dB (100Hz)
(middle) ..... ± 10dB (1kHz)
(treble) ..... ± 10dB (10kHz)
Loudness contour ..... + 10dB (100Hz), + 7dB (10kHz) (volume : – 30dB)

Tape player (KEH-M650/US, KEH-M8250/CA)
Tape ..... Compact cassette tape (C-30 – C-90)
Tape speed ..... 4.76cm/sec. (+ 0.14cm/sec. – 0.05cm/sec.)
Fast forward/rewind time ..... Approx. 100sec. for C-60
Wow & flutter ..... 0.08% (WRMS)
Frequency response ..... Metal : 30 – 22,000Hz (± 3dB)
Stereo separation 45dB
Signal-to-noise ratio ..... Metal : Dolby C NR IN : 71dB (IHF-A network)
Dolby B NR IN : 65dB (IHF-A network)
Dolby NR OUT : 57dB (IHF-A network)

Tape player (KEH-M8200/US)
Tape ..... Compact cassette tape (C-30 – C-90)
Tape speed ..... 4.76cm/sec. (+ 0.14cm/sec. – 0.05cm/sec.)
Fast forward/rewind time ..... Approx. 100sec. for C-60
Wow & flutter ..... 0.08% (WRMS)
Frequency response ..... Metal : 30 – 19,000Hz (± 3dB)
Stereo separation 45dB
Signal-to-noise ratio ..... Metal : Dolby C NR IN : 71dB (IHF-A network)
Dolby B NR IN : 65dB (IHF-A network)
Dolby NR OUT : 57dB (IHF-A network)

Tape player (KEH-M8250/ES)
Tape ..... Compact cassette tape (C-30 – C-90)
Tape speed ..... 4.76cm/sec. (+ 0.14cm/sec. – 0.05cm/sec.)
Fast forward/rewind time ..... Approx. 100sec. for C-60
Wow & flutter ..... 0.08% (WRMS)
Frequency response ..... Metal : 30 – 19,000Hz (± 3dB)
Stereo separation 45dB
Signal-to-noise ratio ..... Metal : Dolby B NR IN : 65dB (IEC-A network)
Dolby NR OUT : 57dB (IEC-A network)

• US, CA Model

FM tuner
Frequency range ..... 87.9 – 107.9 MHz
Usable sensitivity ..... 11 dBf (1.0 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 16 dBf (1.7 μV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IHF-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)
Selectivity ..... 70 dB (2ACA) (±400 kHz)
Three-signal intermodulation
(desire signal level) ..... 50 dBf (two undesire signal level: 110 dBf)

AM tuner
Frequency range ..... 530 – 1,710 kHz
Usable sensitivity ..... 18 μV (25 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±10 kHz)

• ES Model

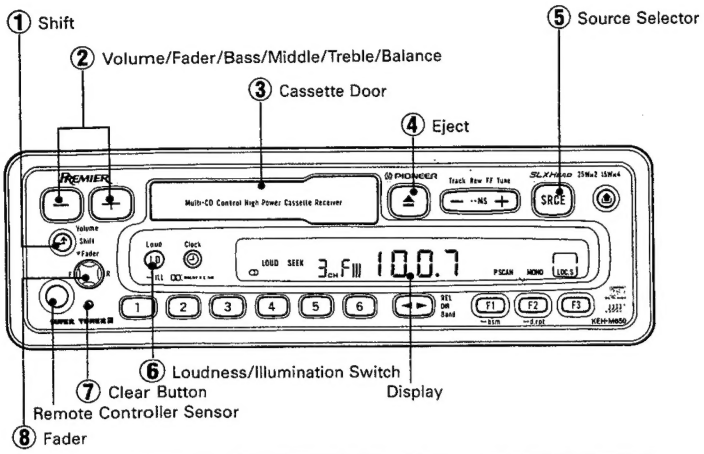
FM tuner
Frequency range ..... 87.5 – 108MHz
Usable sensitivity ..... 11dBf (1.0μV/75 Ω, mono, S/N : 30dB)
50dB quieting sensitivity ..... 16dBf (1.7μV/75 Ω, mono)
Signal-to-noise ratio ..... 70dB (IEC-A network)
Distortion ..... 0.3% (at 65dBf, 1kHz, stereo)
Frequency response ..... 30 – 15,000Hz (± 3dB)
Stereo separation ..... 40dB (at 65dBf, 1kHz)

AM tuner
Frequency range ..... 531 – 1,602kHz (9kHz)
530 – 1,710kHz (10kHz)
Usable sensitivity ..... 18μV (25dB) (S/N : 20dB)
Selectivity ..... 50dB (± 9kHz)
50dB (± 10kHz)

These specifications were determined and are presented in accordance with specification standards established by the Ad Hoc Committee of Car Stereo Manufacturers.

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

1. SWITCHING POWER ON/ADJUSTING VOLUME AND TONE



Using the Clear Button

Once all wiring is complete, press Button ⑦ with a thin, pointed object. Though not a normal occurrence, the microprocessor which controls the operation of this unit can be affected by electrostatic noise. This generally is indicated by such symptoms as no power being supplied when you switch the unit on, failure of buttons and controls, or an abnormal display. Should this happen, press Button ⑦ with a thin, pointed object to reset the microprocessor. Note that doing so also resets all audio controls, so you will have to make any desired settings again. This operation deletes all memory contents, such as frequencies stored in the preset memory, so you will have to make any desired settings again.

Switching Power On

Radio

Press Button ⑤ to switch the tuner power on. Press Button ⑤ again to switch the power off.

Tape

Insert the cassette tape through the Cassette Door ③, and the power will be automatically turned on to get the tape start being played back. To eject the tape, press the Button ④.

- You will hear a few consecutive clicks from your unit when you have started the engine with the cassette tape inserted. The sounds are only the sign of your unit's mechanical preparation being made, but does not indicate at all its functional failure.

Changing the Source

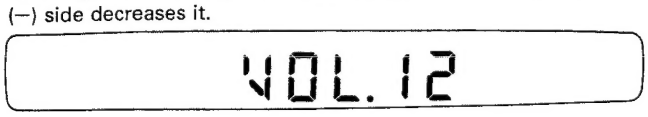
When the cassette tape is inserted, the source changes at each press of the Button ⑤: Tape → Radio → OFF. When a Multi-Play CD Player—optionally available Multi-Play CD Player CDX-M60, for example—is connected to your unit, the source changes: Multi-Play CD Player → Tape → Radio → OFF.

Adjusting Volume/Fader/Bass/Middle/Treble/Balance

To adjust volume, press the Button ②. The display changes at each press of the Button ①: Volume → Fader → Bass → Middle → Treble → Balance. Press the Button ② to adjust the displayed mode.

Adjusting Volume

Pressing the (+) side of Button ② increases the volume, while the (−) side decreases it.



Adjusting the Fader

This fader controls the balance between speakers [1], [2], and [3], and speakers [4], which are shown in Figure. Press the (−) side of Button ② to raise the volume of speakers [1], [2] and [3] only; press the (+) side to raise the volume of speakers [4] only.

- The unit has two faders: the electronic preamp fader and the power fader controlled by Fader Control Knob ⑧. The use of both faders depend on the way the speakers are connected. For details, see "Using the Fader".

Adjusting Bass

Pressing the (+) side of Button ② increases bass, while the (−) side decreases bass.

Adjusting Middle

Pressing the (+) side of Button ② increases middle, while the (−) side decreases middle.

Adjusting Treble

Pressing the (+) side of Button ② increases treble, while the (−) side decreases treble.

Adjusting Balance

Pressing the (−) side of Button ② shifts the balance to the left speaker, while the (+) side shifts it to the right speaker.

- When you're adjusting fader, bass, middle, treble, or balance settings, the indicator will stop at the center setting. About 5 seconds after adjustment has been made, the display returns to its previous state.

Using the Loudness Function

Press Button ⑥ and the **"LOUD"** indicator will appear on the display. This "loudness" function enhances both the high and low ranges of sound to give even more power to output even at low volumes.

Switching Illumination Colour

You can select either green or amber for the switch illumination color. To switch the color, hold down Button ⑥ for two seconds. Pressing Clear Button ⑦ causes the illumination to be turned green.

Using Source Level Adjustor

You may wish to adjust volume when you have changed the source to radio, tape, or CD or when you have changed the radio band from FM to AM. You can do so on the basis of the volume of FM as follows:

1. Use the Button ⑤ to change the source. (In case of radio, change the band to AM.)
2. Hold down the Button ① for about 2 seconds, and the display will show you the volume of the source.

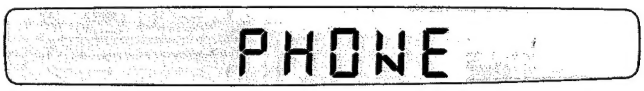
3. To increase the volume, press the (+) side of the Button ②, and the decrease press the (—) side. You can adjust the volume within a span of V — 4 and V + 4. The display automatically returns to the previous showing when five seconds have elapsed after the adjustment.

- No adjustment can be made when an FM station is tuned in.

Regarding the Cellular Telephone Muting

When the audio mute terminal of a separately sold PIONEER cellular telephone is connected to the cellular mute terminal of the unit, the following function becomes active.

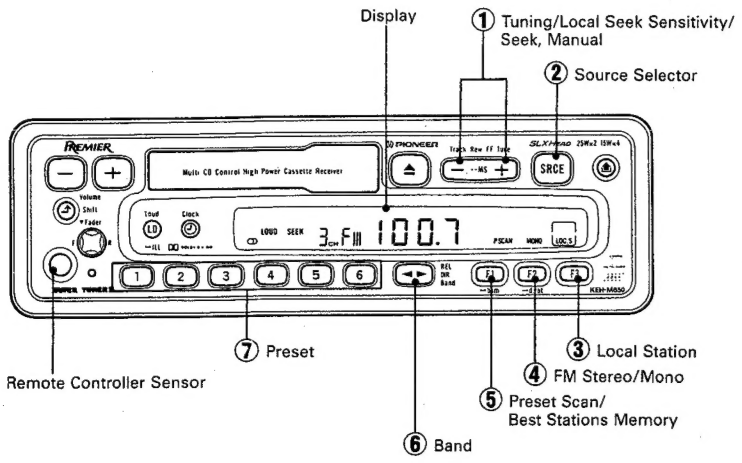
When a phone call is received or made on the cellular telephone, the volume is automatically lowered by the unit, and PHONE is shown on the display.

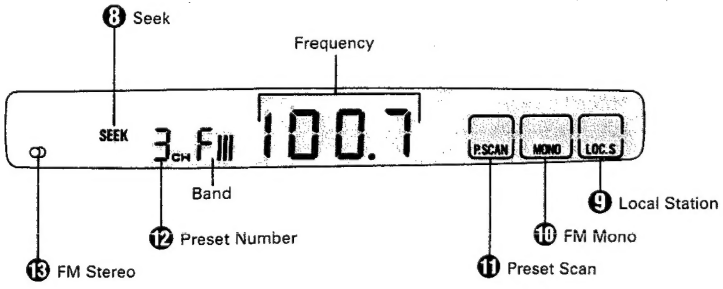


When a call is ended, the volume returns to the previous level and the previous display is shown again.

- When the volume is lowered by the operation of the cellular telephone muting function (**"PHONE"** is shown on the display), the unit's shift Button ① and the attenuator button of the remote controller unit are disabled.

2. USING THE RADIO





1 Press Button ② to switch the radio power on.

2 Press Button ⑥ to select a band.

$F_I \rightarrow F_{II} \rightarrow F_{III} \rightarrow A_I$
(FM1) (FM2) (FM3) (AM)

3 Use seek tuning to tune in a frequency.

Confirm that the **"SEEK"** indicator ⑧ is shown on the display (if not, press the (+) and (—) sides of Button ① at the same time). Press the (+) side of Button ① to automatically tune in the next higher receivable frequency, and the (—) side for a lower frequency.

4 Adjust volume and tone (see page 3).

5 Assign the tuned frequency to one of the buttons in Bank ⑦ (preset memory).

Press and hold down one of the buttons in Bnak ⑦ for at least two seconds. The frequency is assigned to the selected button when the Preset Number ⑫ stops flashing on the display. Up to 18 FM stations (6 each for FM1, FM2 and FM3), and six AM stations can be assigned to the preset memory buttons in Bank ⑦.

6 Once a frequency is assigned to a button in Bank ⑦, you just need to press that button to tune it in.

This also causes the number of the button pressed to appear at Position ⑫ on the display.

Preset Scan Tuning

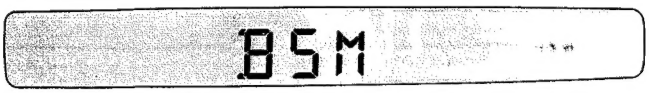
This function lets you automatically monitor the stations assigned to the preset buttons.

1. Pressing Button ⑤ turns on the frame of Preset Scan ⑪ and flashes Preset Number ⑫.
   Each station assigned to the buttons in Bank ⑦ will be automatically tuned in for about eight seconds.
2. When you hear a station that you like, press Button ⑤ again to cancel preset scan tuning and remain at that station.

BSM (Best Stations Memory)

This function automatically locates stronger stations and automatically assigns their frequencies to the buttons in Bank ⑦, from strongest to weakest. It comes in handy when trying to find local stations while driving.

1. Press Button ⑥ and select a band.
2. Hold down Button ⑤. After about two seconds, a "beep" will sound to signal that the BSM search has started. At this time, **"BSM"** will flash on the display.



3. The frequency display will return once BSM search is complete, and frequencies are assigned to buttons 1 through 6 in Bank ⑦.

- At the end of the BSM search, the displayed frequency is that assigned to Button [1] of Bank ⑦.
- If there are fewer than six strong stations in the area, some of the buttons in Bank ⑦ will not be assigned frequencies, so they will retain any frequencies assigned to them previously.
- BSM search may take as long as 30 seconds in areas where there are few strong stations.
- You can cancel BSM search by pressing Button ⑥.

Manual Tuning

Use manual tuning when stations are too weak to be picked up by seek tuning.

1. Press both (+) and (−) sides of Button ① at the same time to clear **"SEEK"** ⑧.
2. Each press of the (+) side of Button ① increases the frequency in 0.2 MHz steps in the FM band, 10 kHz in the AM band. Pressing the (−) side of Button ① decreases the frequency. Holding down either side of Button ① changes the frequency at high speed.

Switching between FM stereo and Mono

Generally, it is best to allow the "Super Tuner Ⅲ" function to automatically set the optimum listening conditions. ⓒⓓ ⑬ turns on during stereo broadcast is in reception. When there is a large amount of noise, you can press Button ④ for clearer mono reception (The frame of FM Mono ⑩ turns on).

Adjusting Seek Sensitivity

The seek tuning function of this tuner lets you select between a local setting for reception of strong stations only, and a DX (distant) setting for reception of weaker stations. The local setting also has four seek tuning sensitivity levels for FM and two levels for AM to match local conditions.

Changing the Local Seek Sensitivity

1. Use Button ⑥ to select a band.
2. Hold down the Button ③ for more than two seconds, and the display will show you the current local seek sensitivity for about five seconds.

(Example: LOC-2)

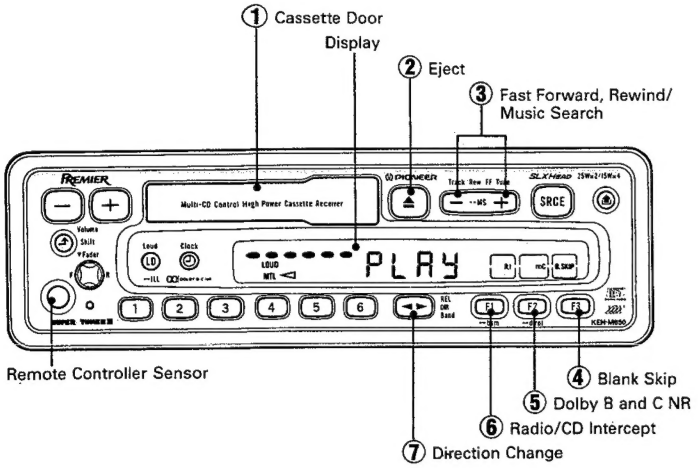
3. While the local seek sensitivity remains on the display, press the (+) side of Button ① to increase the sensitivity level, and the (−) side to decrease the level as shown below.
   FM: LOC-1 ⇄ LOC-2 ⇄ LOC-3 ⇄ LOC-4
   AM: LOC-1 ⇄ LOC-2
   The LOC-4 setting allows reception of only the strongest stations, while lower settings let you receive pregressively weaker stations.

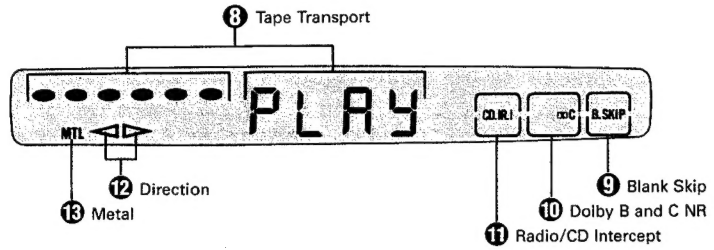
- The display of local seek sensitivity returns to the frequency when about five seconds have elapsed after the change of sensitivity.

Switching between Local and DX

Press Button ③ to switch between Local and DX (distant) seek tuning. When the frame of Local Seek ⑨ it lit, seek tuning is performed with the local seek sensitivity. Otherwise, seek tuning is performed with the DX seek sensitivity.

3. USING THE TAPE DECK





1 Insert the cassette tape into the Slot ①, and power will be turned on and the tape begin being played back.
At this time, the Tape Transport Indicator ⑧ and the Direction Indicator ⑫ will light up.

2 Adjust volume and tone (see page 3).

3 To eject the cassette tape, press the Button ②.

- Power is automatically turned off when the cassette tape has not been set within a few seconds. When this happens, remove the tape by pressing the Button ② because of a possible trouble with the tape.
- A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.

Changing Program

Press the Button ⑦ to change the side of tape from A to B or vice versa.

Using Fast Forward and Rewind

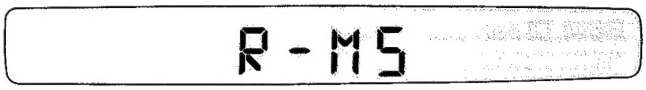
1. To forward tape fast, press the (+) side of the Button ③.

To rewind tape, press the (—) side.

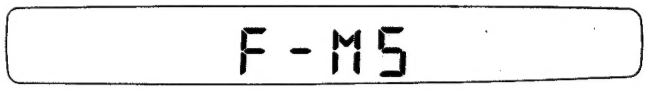
2. To release the Fast Forward or Rewind function, press the Button ⑦

Using Music Search

1. To repeat the current selection (A), press the (—) side of the Button ③ two consecutive times.



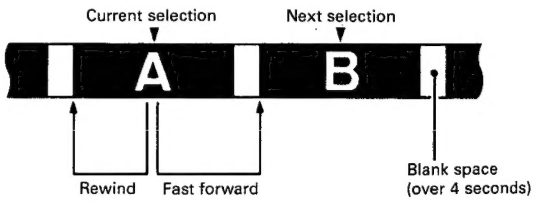
To hear the follwing piece of music (B) rather than continue the current selection, press the (+) side of the Button ③ two consecutive times. Pressing the Button ③ three consecutive times makes the normal sequence of playing resume.



2. To release the Music Search function, press the Button ⑦.

The following errors will cause the music search function to operate improperly, even though the unit is not malfunctioning.

- Unrecorded "blank" portions between selections less than 4 seconds → the blank portion cannot be detected by the unit.
- Pauses in recorded conversations longer than 4 seconds → the unit reads these as blanks between selections.
- Portions recorded at very low volume for more than 4 seconds → the unit reads these as blanks between selections.



Dolby B and C NR

Press Button ⑤ to listen to a cassette recorded using the Dolby NR system. Each press of Button ⑤ shifts the Dolby NR mode as follows:
Dolby B NR (DD and the frame at Dolby B and C NR ⑩ turn on) → Dolby C NR (DD C and the frame at ⑩ turn on) → Dolby NR off (the frame at ⑩ turns off)

Auto Tape Selector

When a cassette tape is inserted, the automatic tape selector determines the tape type, and switches between 70 μs and 120 μs equalization. When it is a metal or chrome tape, **"MTL"** ⑬ comes on. When it is a normal tape, nothing comes on.

Blank Skip

Pressing Blank Skip Button ④ turns on the frame at Blank Skip ⑨ and causes the unit to automatically fast forward to the next recorded position when a blank of about 10 seconds is detected on the tape.

Using the Radio Intercept

(When the optional Multi-Play CD Player is not connected)

Use the Radio Intercept function to hear radio while fast forwarding or rewinding.

1. Press Button ⑥ (**"R.I"** and the frame at Radio/CD Intercept ⑪ turn on.) before fast forwarding or rewinding to hear the radio.
2. To cancel the Radio Intercept function, press Button ⑥ again.

- The Radio Intercept function does not function when the Music Search or Blank Skip function is in operation.

Using Radio/CD Intercept

(When the optional Multi-Play CD Player is connected)

Connecting the optional Multi-Play CD Player adds a CD Intercept function along with the Radio Intercept function.

Each press of Button ⑥ causes the mode to change as follows:

Radio Intercept (**"R.I"** and the frame at Radio/CD Intercept ⑪ turn on) → CD Intercept (**"CD.I"** and the frame at ⑪ turn on) → Normal (the frame at ⑪ turns off)

When the Radio Intercept mode is on, the radio will be audible during fast forwarding or rewinding. When the CD Intercept mode is on, disk play will be audible during fast forwarding or rewinding.

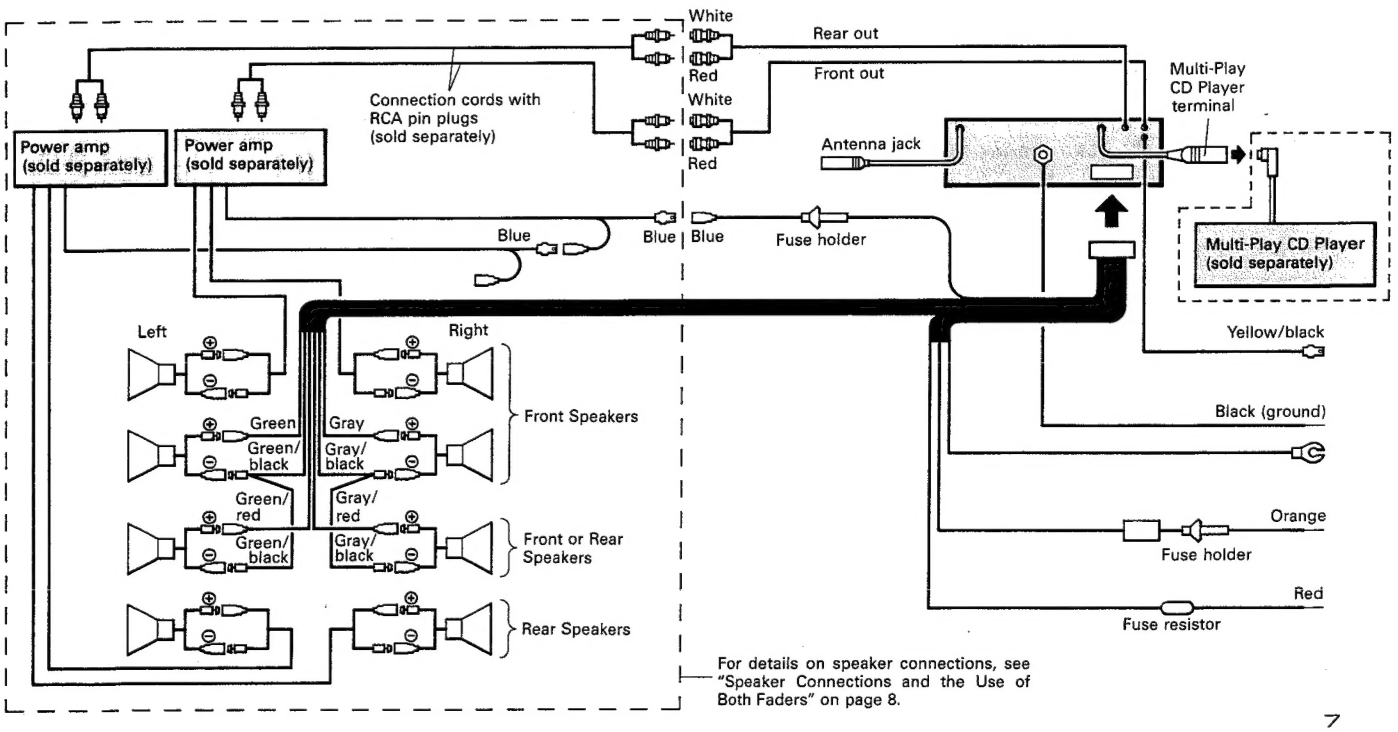
- Radio/CD Intercept does not function when the Music Search or Blank Skip function is in operation.

4. CONNECTIONS

Note:

- To avoid shorts in the electrical system, be sure to disconnect the battery ⊖ cable before beginning installation.
- Replace fuses only with the types stipulated on the fuse holder.
- Be sure to properly connect the color coded leads. Failure to do so can cause malfunctions.
- Cover unused terminals with tape to prevent electrical shorts.
- Refer to the owner's manual for details on connecting the various cords of the power amp and other units, then make connections correctly.
- If the rear or front out RCA pin jack on the unit are not being used, do not remove the cap attached to the end of the connector.
- Since a unique BPTL circuit is employed, never wire so the speaker leads are directly grounded or the left and right speaker ⊖ leads are common.
- Speakers connected to this unit must be high-power type possessing maximum input of at least 25 W and impedance of 4 to 8 ohms. Connecting speakers with output and/or impedance values other than those noted here can damage the speakers.
- When the power amp is being linked with this system, be sure not to connect the blue lead to the amp's power terminal. Likewise, when linking this system with the auto-antenna, do not connect to power terminal for the antenna. Such connection can make overcurrent cause malfunctions.

Blue	If this unit is combined with a power amp, connect its blue lead to the blue lead (system control terminal) of the power amp. If combined with an auto-antenna, connect its blue lead to the relay control terminal of the auto-antenna. (MAX. 300 mA, 12 V CC)
Yellow/Black	Cellular Mute If you use a separately sold PIONEER cellular telephone, connect it via the Audio Mute lead on the cellular telephone. If not, keep the Audio Mute lead free of any connections.
Black (ground)	To vehicle (metal) body.
Orange	To terminal always supplied with power regardless of ignition switch position.
Red	To electric terminal controlled by ignition switch (12 V DC) ON/OFF.



5. DISASSEMBLY

● Removing the Case

1. Insert and turn a screwdriver to remove the case.
2. Raise the case to remove.

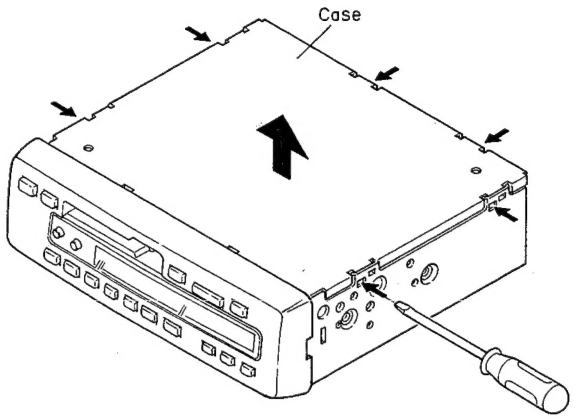


Fig. 1

● Removing the Cassette Mechanism Assy

1. Remove the four screws.
2. Disconnect the deck unit connector.
3. Remove the cassette mechanism assy.

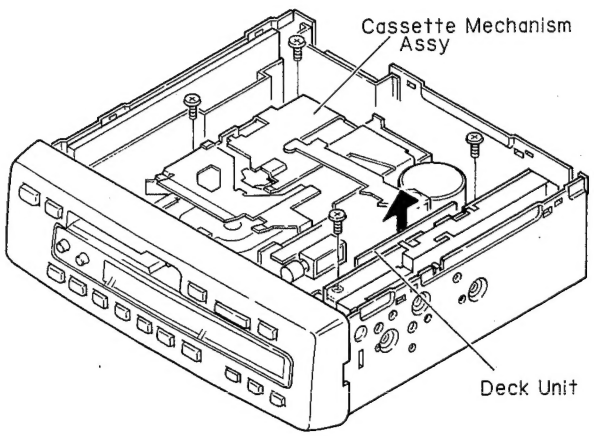


Fig. 2

● Removing the Grille Assy

1. Disconnect the two connectors.
2. Press the tabs at four locations, and then pull out the grille assy.

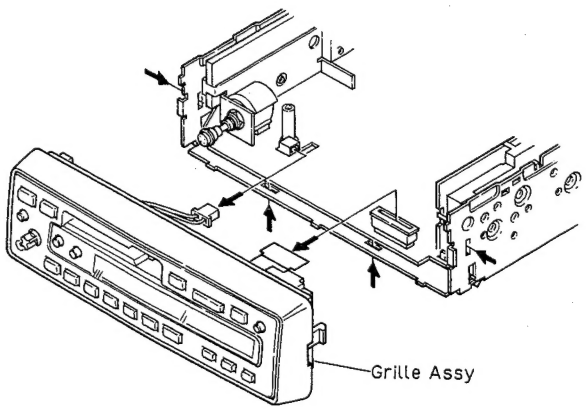


Fig. 3

● Removing the Display Unit

1. Remove the two screws and then remove the two stoppers.
2. Remove the two screws and then remove the cover.
3. Remove the display unit.

Note:
The display unit is held together by only four screws. After removing the four screws, remove the cover very carefully. If the cover is removed with too much force, there is a risk of the display unit, lens, button, etc. inside spilling out. To prevent this from happening, as there is a hook located at the part indicated by the arrow in the figure, press and then after removing the hook, remove the cover.

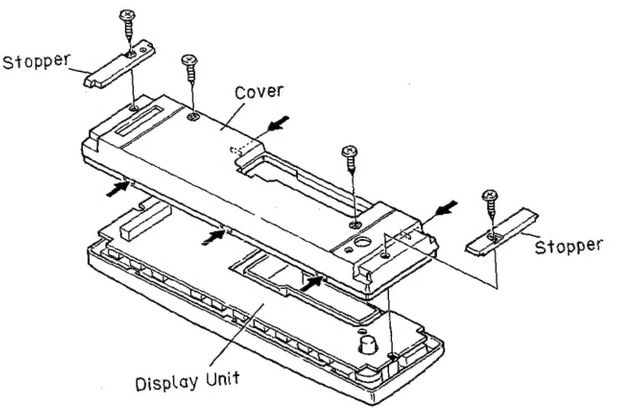


Fig. 4

● Removing the Tuner Amp Unit

1. Remove the two screws A and the two screws B.
2. Remove the screw C and then remove the holder.
3. Unbend the tabs at two locations indicated by arrows.
4. Remove the solder indicated by arrow.
5. Raise up on tuner amp unit to remove it from the chassis uint.

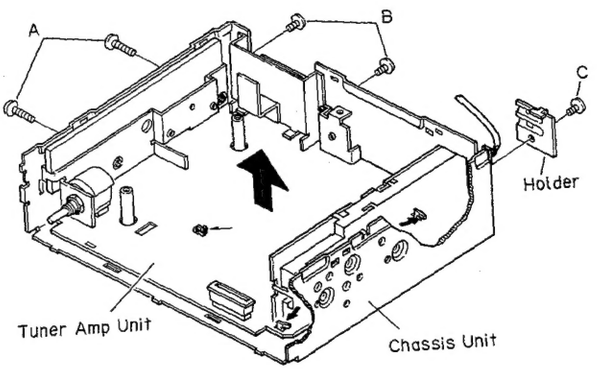


Fig. 5

6. ADJUSTMENT

TEST MODE

Test mode is mainly used in adjustment of CD multi-players (such as CDX-M40, CDX-M50).

- Switching to test mode
  While pressing the 4 and 6 keys together, switch the back-up ON or release the clear button.

- Canceling test mode
  Press the CD multi-player clear button, and then the KEH-M650 (KEH-M8200, KEH-M8250) clear button. Or, switch the CD multi-player and KEH-M650 (KEH-M8200, KEH-M8250) back -up OFF.

- Key functions during test mode
  The CD multi-player, deck, and tuner are selected by the SOURCE key.

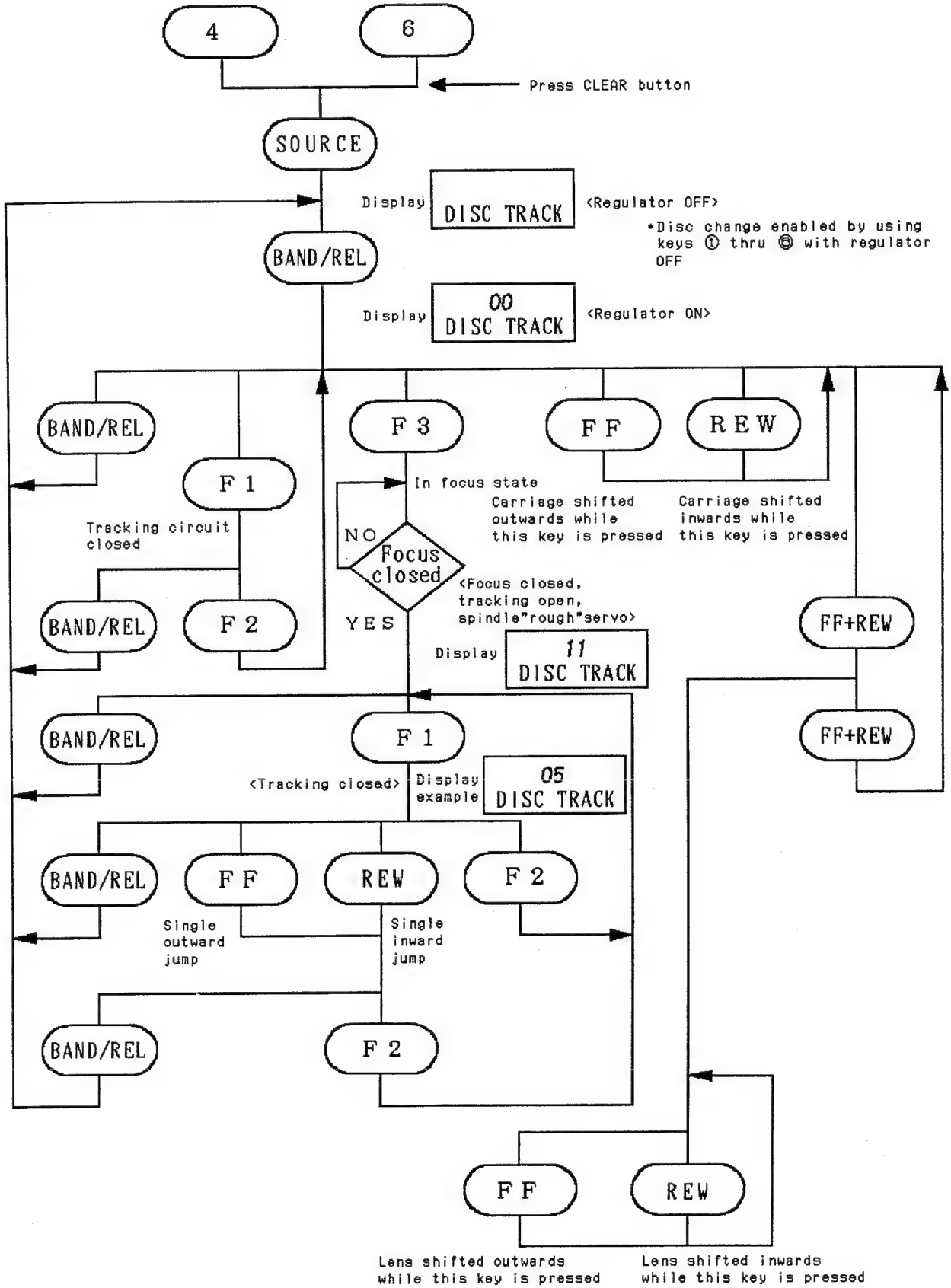
a) CD multi-player

Key	Function
BAND/REL	Regulator ON/OFF
FF	FWD kick
REW	REV kick
F1	Tracking close
F2	Tracking open
F3	Focus close
FF+REW	Carriage/tracking switching

b) DECK
No corresponding function. Normal operation executed.

c) TUNER
During BSM operation, BSM is canceled when three station are detected.
Other keys are used for normal operations.

● Flow Chart


4
6
Press CLEAR button
SOURCE
Display
DISC TRACK
<Regulator OFF>
*Disc change enabled by using keys ① thru ⑥ with regulator OFF
BAND/REL
Display
00
DISC TRACK
<Regulator ON>
BAND/REL
F 3
F F
R E W
F 1
In focus state
Carriage shifted outwards while this key is pressed
Carriage shifted inwards while this key is pressed
Tracking circuit closed
NO
Focus closed
YES
<Focus closed, tracking open, spindle"rough"servo>
BAND/REL
F 2
FF+REW
Display
11
DISC TRACK
BAND/REL
F 1
FF+REW
<Tracking closed>
Display example
05
DISC TRACK
BAND/REL
F F
REW
F 2
Single outward jump
Single inward jump
BAND/REL
F 2
F F
REW
Lens shifted outwards while this key is pressed
Lens shifted inwards while this key is pressed

AUDIO/TUNER ADJUSTMENT

● Connection Diagram

NOTICE:
SELECT C1 so that total capacity of 80pF is attained from the direction of the receiver jack.
Z: Output impedance of SSG.

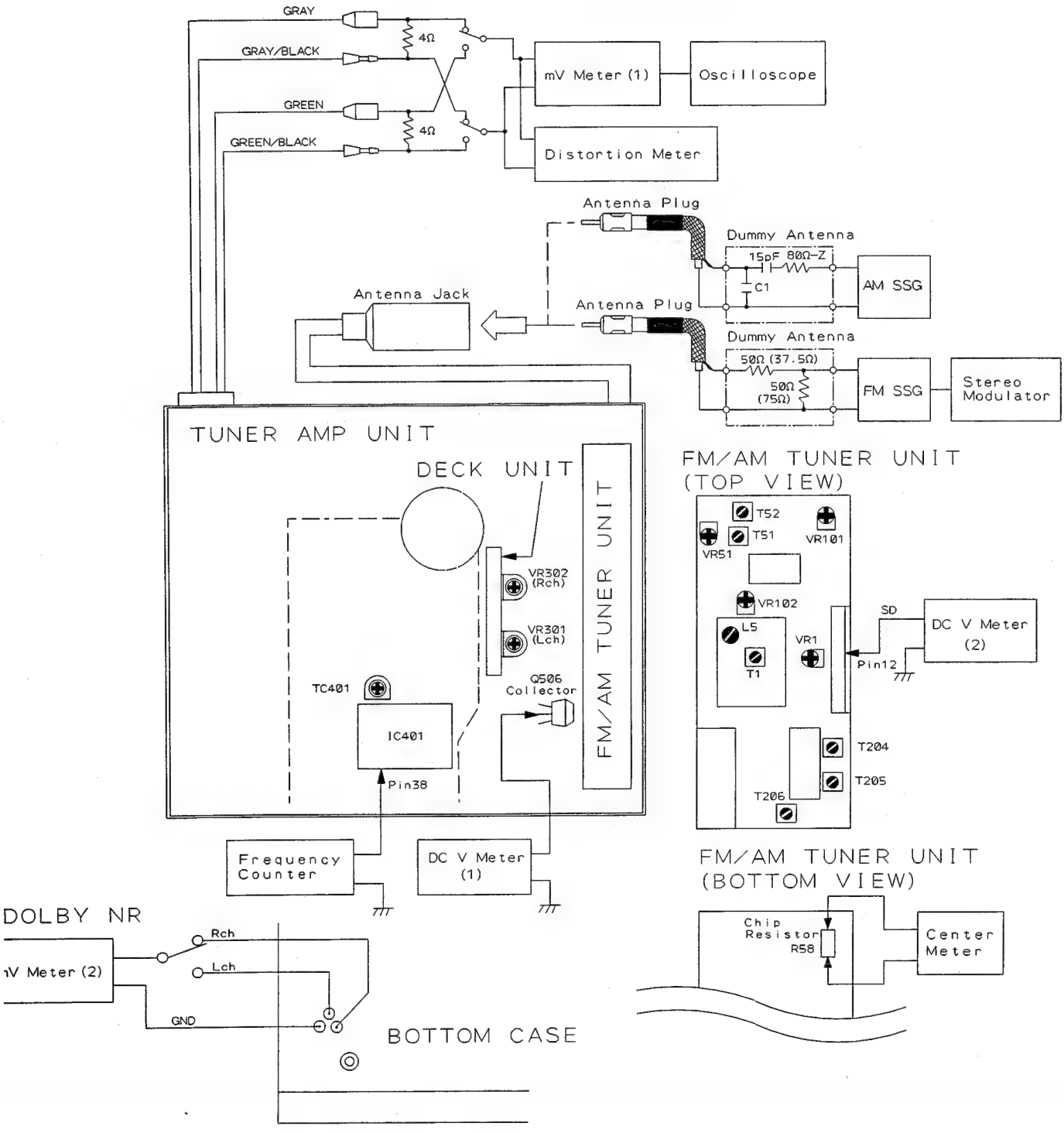


Fig. 6

FM ADJUSTMENT

※ Stereo MOD. : 1kHz, L+R=90% , Pilot=10%
*( ): ES Model

	No.	FM SSG (400Hz, 100%)		Displayed Frequency (MHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (MHz)	Level (dBμV)			
IF	1	98.1	60	98.1	T51	Center Meter:0
	2	98.1	60	98.1	T52	Distortion Meter:Minimum
	3	Repeat No.1-2 alternately so that the center meter indicates the 0 output and distortion meter indicates minimum output.				
Front End	1			107.9 *(108)	L5	DC V Meter(1):6.2±0.2V
	2			87.9 *(87.5)		Verify that DC V Meter(1) is more than 2.1±0.6V
	3	98.1	8	98.1	T1	Oscilloscope:Optimum Symmetry
	4	98.1※	60	98.1	T1	Distortion Meter:Minimum Rotate T1 less than±90
Soft Mute	1	98.1	60	98.1		mV Meter(1):A dB
	2	98.1	9	98.1	VR102	mV Meter(1):A-3dB
ARC	1	98.1※	34	98.1	VR101	mV Meter(1):Separation 5dB
SD	1	98.1	15	98.1	VR51	DC V Meter(2):Approx. 5V
	2	98.1	14	98.1		Verify that DC V Meter (2) is approx. 0V.
	3	98.1	55	98.1	VR1	DC V Meter(2):Approx. 5V
		Connect collector of Q2 to GND. Connect DC regulated power supply to pin 3 of FM front end through resistor(330Ω). Add 4.3v from DC regulated power supply.				
	4	98.1	54	98.1		Verify that DC V Meter (2) is approx. 0V.

AM ADJUSTMENT

*( ): ES model when tuning step at 9kHz.

	No.	AM SSG (400Hz, 30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (kHz)	Level (dBμV)			
Tuning Volt	1			1,710 *(1,602)	——	Verify that DC V Meter (1) is less than 6.5V.
	2			530 *(531)	——	Verify that DC V Meter (1) is more than 2.0V.
IF	1	1,000 (999)	15	1,000 (999)	T204, 205, 206	mV Meter (1) :Maximum

DOLBY NR ADJUSTMENT (KEH-M650/US, KEH-M8200/US, KEH-M8250/CA)

No.	Cassette Tape	Adjusting Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz, 200nwb/m)	VR301 (Lch) VR302 (Rch)	mV Meter (2) :-8.2dBs+1.5dB -0.5dB (DOLBY NR Switch:OFF)

DOLBY NR ADJUSTMENT (KEH-M8250/ES)

No.	Cassette Tape	Adjusting Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz, 200nwb/m)	VR301 (Lch) VR302 (Rch)	mV Meter (2) :-7.2dBs±1dB (DOLBY NR Switch:OFF)

CLOCK ADJUSTMENT

No.	Adjusting Point	Adjustment Method
1	Tuner Mode	BACK-UP→ON, ACC→ON
2		Connect pin 32 (TEST. I) of IC401 to pin 58 (VDD)
2	TC401	Frequency Counter:1,048,576Hz±2Hz

7. BLOCK DIAGRAM

● **KEH-M650/US**

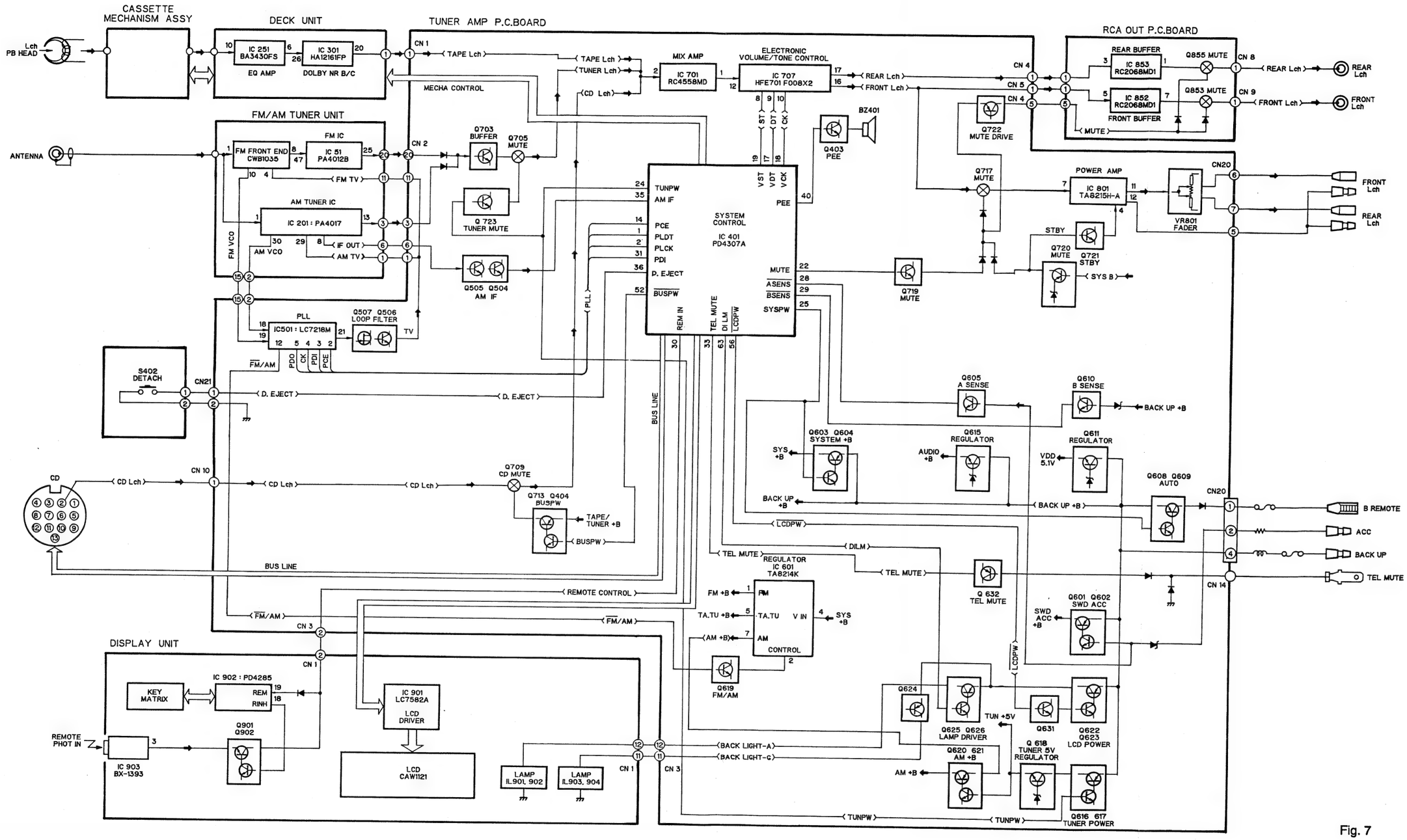
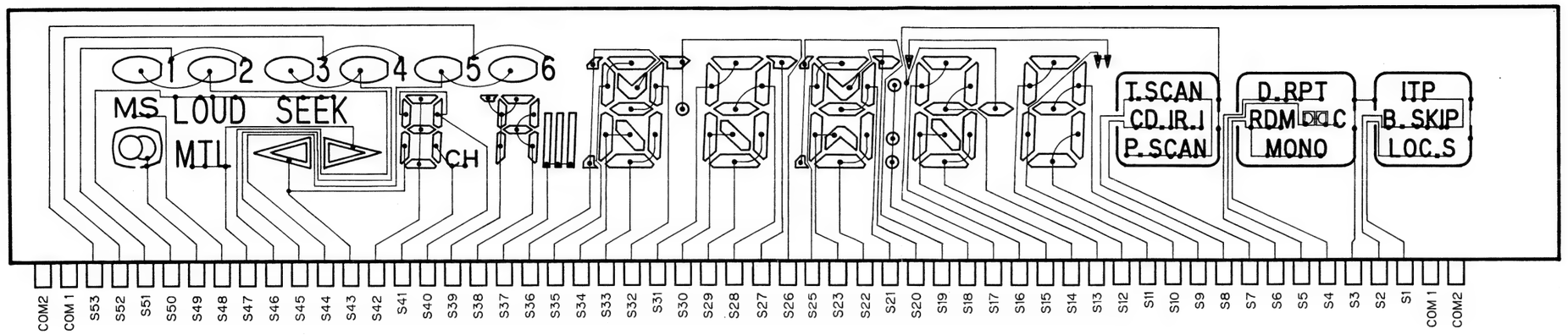


Fig. 7

8. LCD (CAW1133)

SEGMENT



COMMON

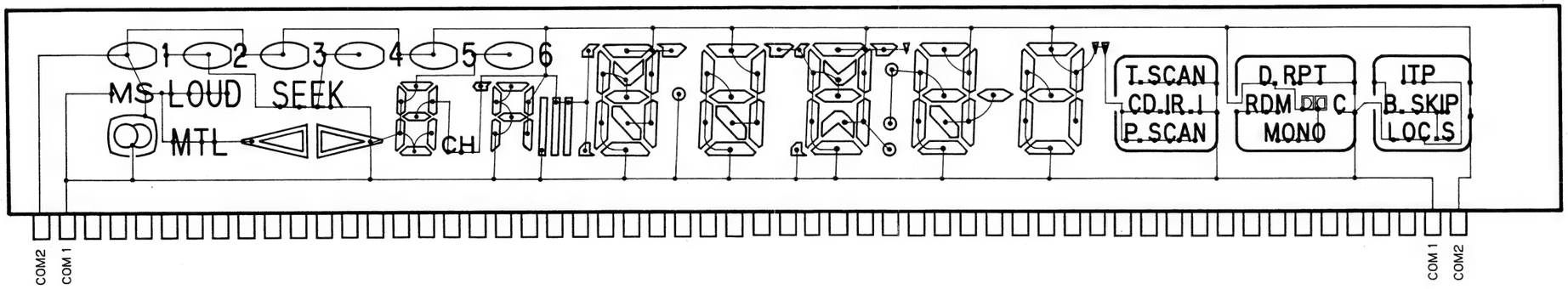
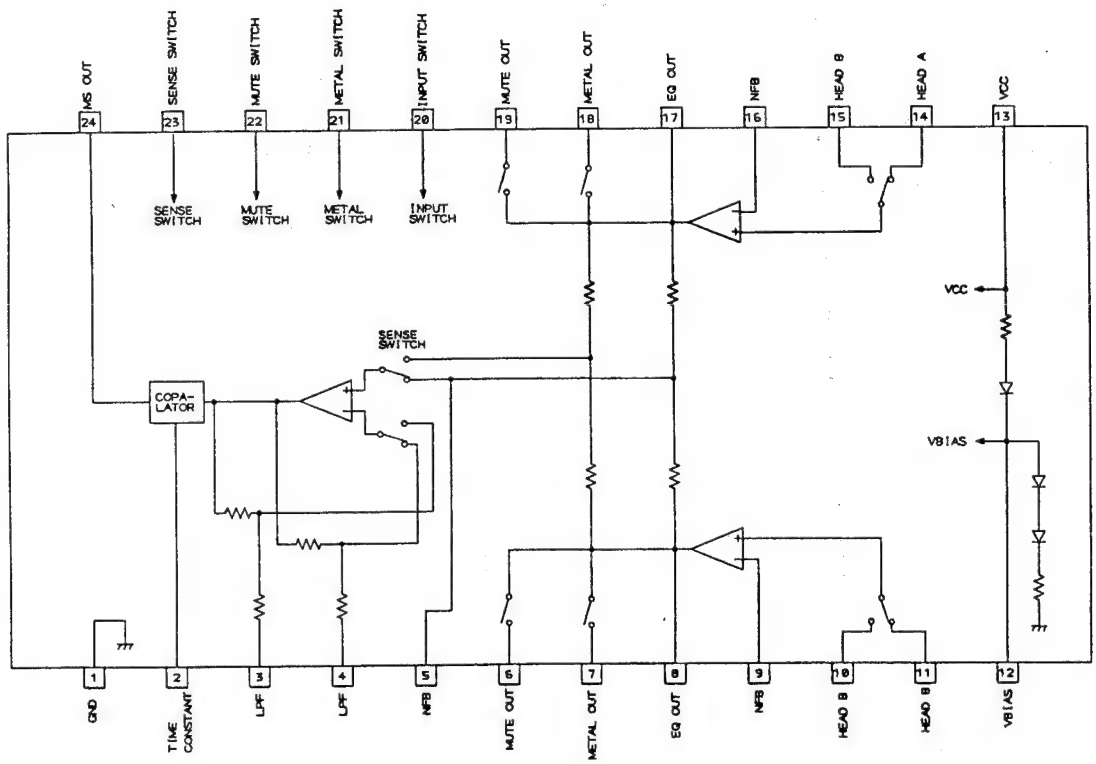


Fig. 8

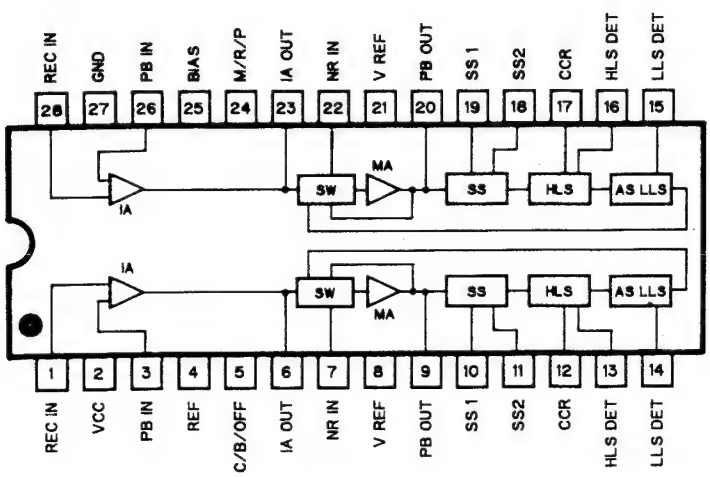
● ICs

IC251:BA3430FS



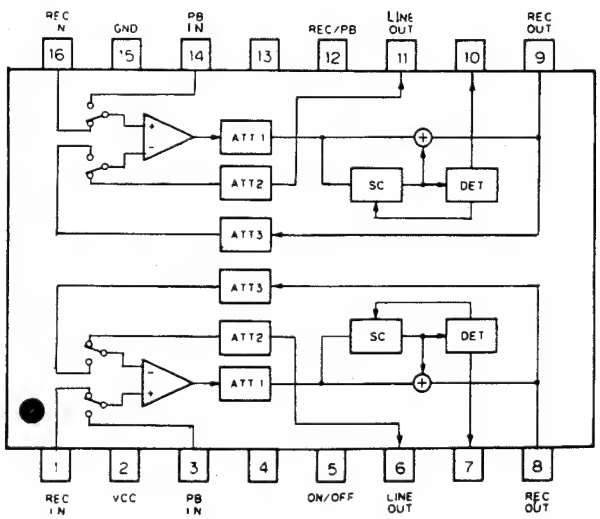
KEH-M650/US, KEH-M8200/US, KEH-M8250/CA

IC301:HA12161FP

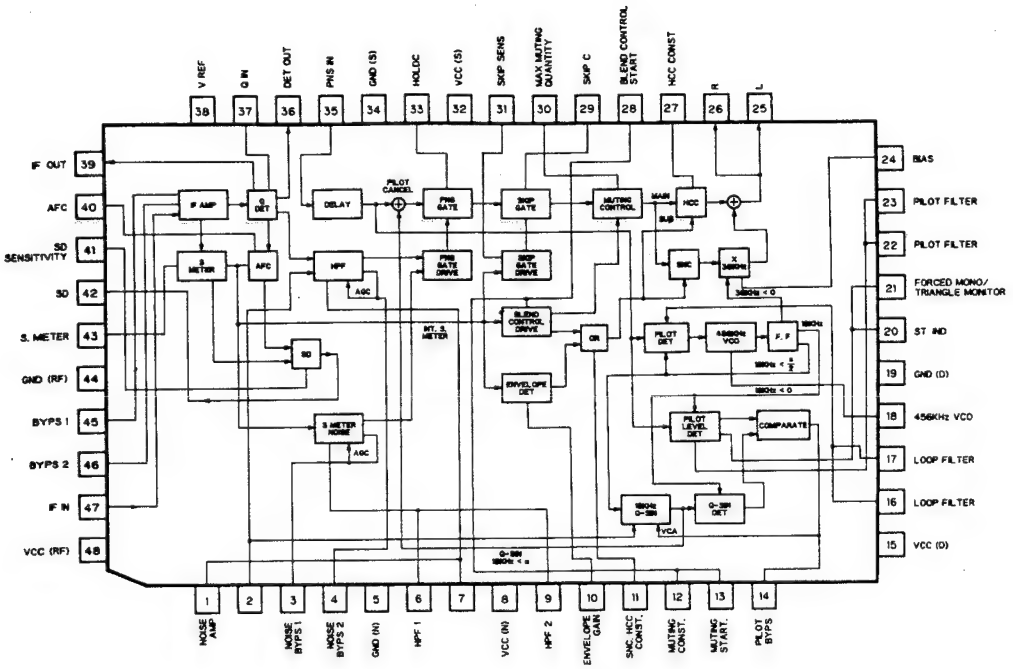


KEH-M8250/ES

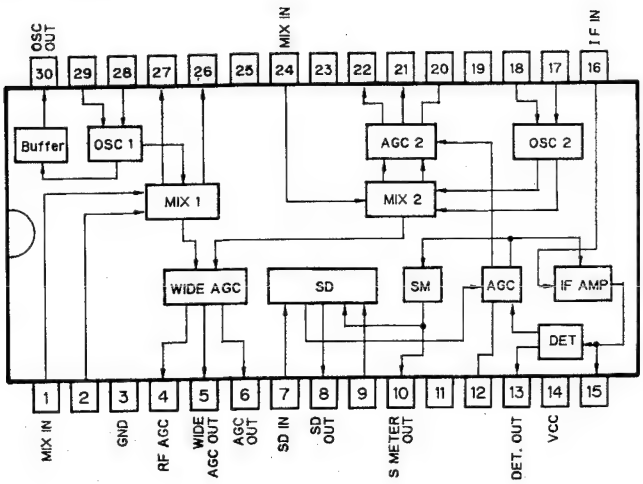
IC301:HA12134FP



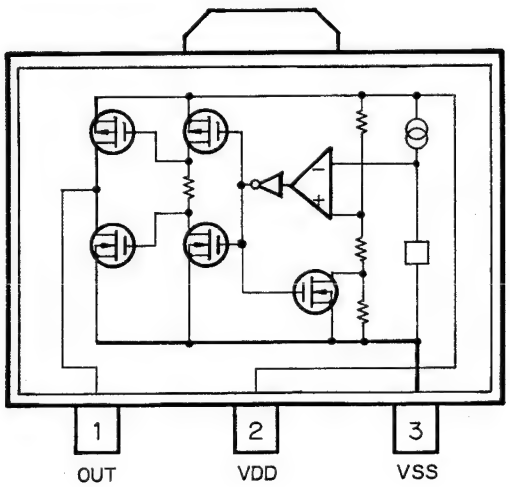
IC51 : PA4012B



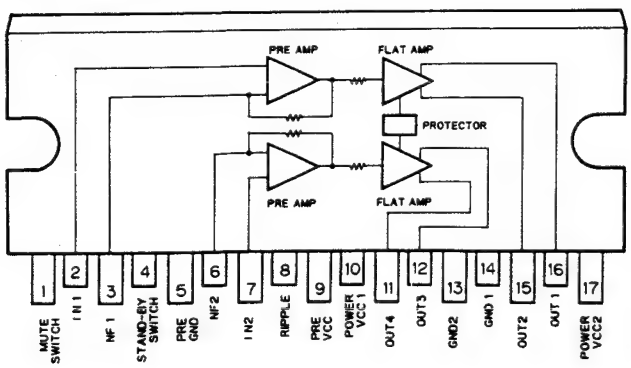
IC201 : PA4017



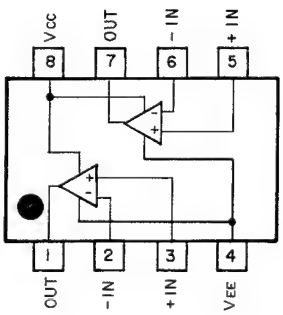
IC904: S-80740AH



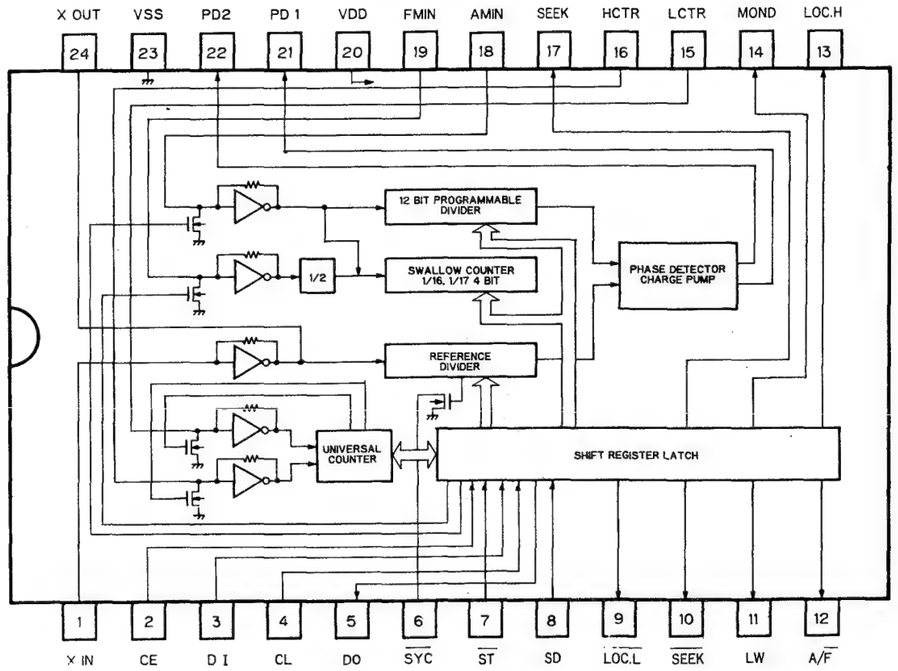
IC801 : TA8215H-A



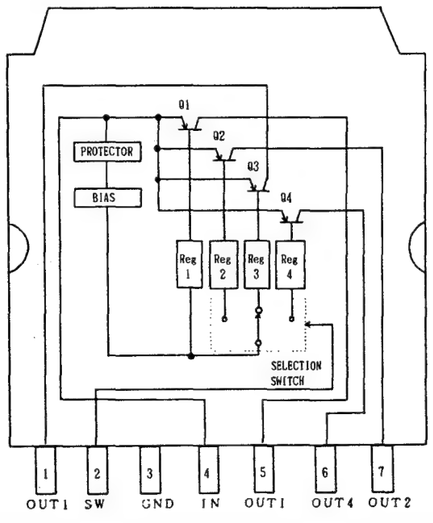
IC701,706 : RC4558MD



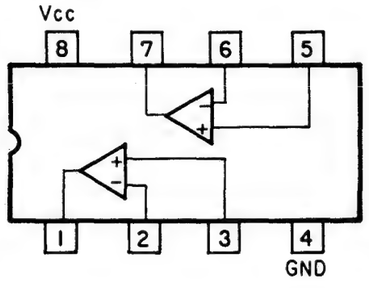
IC501: LC7218M



IC601:TA8214K

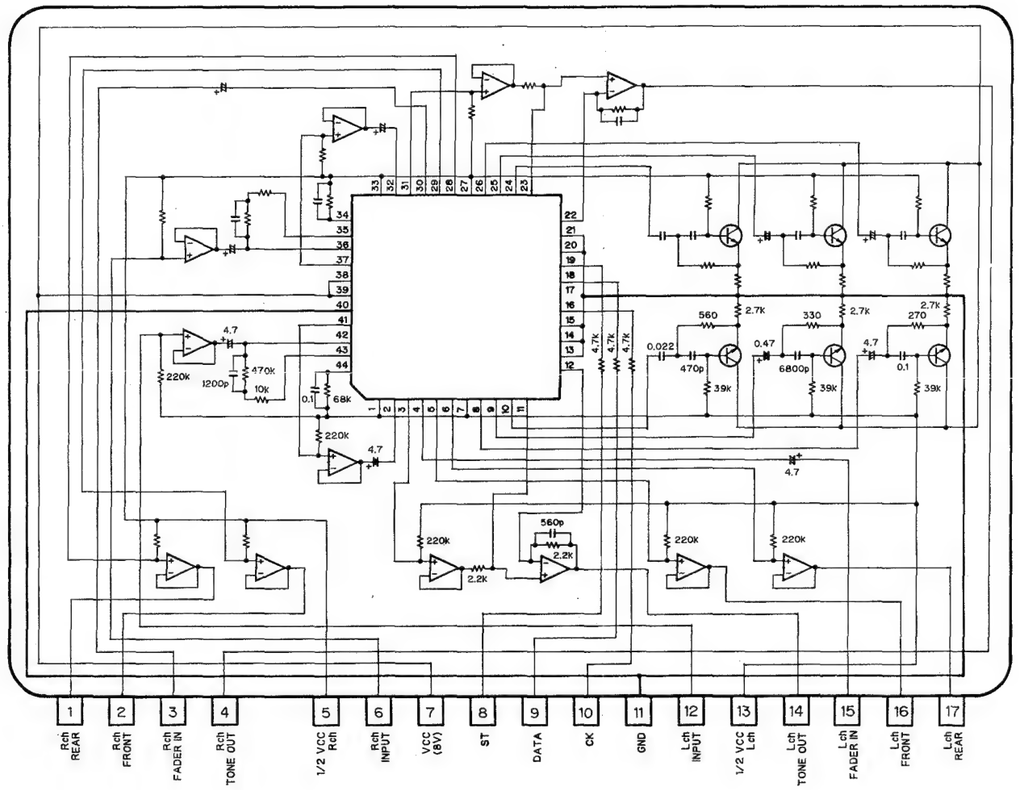


IC702 : UPC4570G

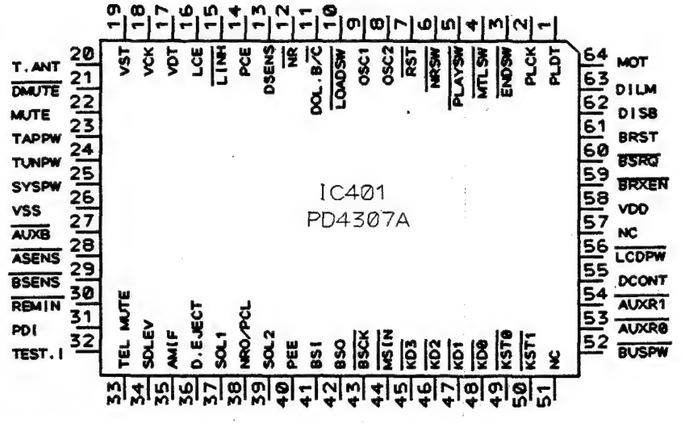


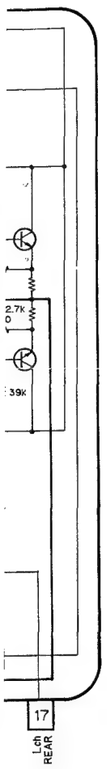
IC707 : HFE701F008X2

● Pin I



IC401 : *PD4307A





● Pin Function (PD4307A)

Pin No.	Pin Name	I/O	Output Format	Function and Operation
1	PLDT	Output	C	LCD driver IC and PLL IC data line
2	PLCK	Output	C	LCD driver IC and PLL IC clock line
3	$\overline{\text{ENDSW}}$	Input		Deck END sensor input
4	$\overline{\text{MTLSW}}$	Input		Deck METAL(70μS)sensor input
5	$\overline{\text{PLAYSW}}$	Input		Deck head position(PLAY)sensor input
6	$\overline{\text{NRSW}}$	Input		Deck FWD/REV sensor input
7	$\overline{\text{RST}}$	Input		Reset input
8	OSC2			Crystal oscillating element connection pin
9	OSC1			Crystal oscillating element connection pin
10	$\overline{\text{LOADSW}}$	Input		Deck LOAD/EJECT sensor input
11	DOL. B/$\overline{\text{C}}$	Output	C	Dolby NR B/C selector output
12	$\overline{\text{NR}}$	Output	C	Dolby NR ON/OFF selector output
13	$\overline{\text{DSENS}}$	Input		Front panel EJECT/REPLACE sensor input
14	PCE	Output	C	Chip enable output for PLL IC (IC501:LC7218M)
15	$\overline{\text{LINH}}$	Output	C	INH control output for LCD driver IC(IC901:LC7582A)
16	LCE	Output	C	Chip enable or strobe output for LCD driver IC(IC901:LC7582A)
17	VDT	Output	C	Data output for electronic volume IC(IC707:HFE701F008X2)
18	VCK	Output	C	Clock output for electronic volume IC(IC707:HFE701F008X2)
19	VST	Output	C	Strobe output for electronic volume IC(IC707:HFE701F008X2)
20	T. ANT	Output	C	Not used
21	$\overline{\text{DMUTE}}$	Output	C	Deck mute output
22	MUTE	Output	C	System mute output
23	TAPPW	Output	C	Deck power supply control(Not used)
24	TUNPW	Output	C	Tuner power supply control
25	SYSPW	Output	C	System(power amp)power supply control
26	VSS			GND
27	$\overline{\text{AUXB}}$	Input		AUX B sensor input
28	$\overline{\text{ASENS}}$	Input		ACC power supply sensor input
29	$\overline{\text{BSENS}}$	Input		BACK UP power supply sensor input
30	$\overline{\text{REMIN}}$	Input		Remote control pulse input
31	PDI	Input		Data input for PLL IC (IC501:LC7218M)
32	TEST. I	Input		Test program input
33	TEL MUTE	Input		TEL mute input
34	SDLEV	Input		Signal level input
35	AM IF	Input		AM IF count input
36	D. EJECT	Input		Front panel EJECT sensor input
37	SOL1	Output	C	Output for deck solenoid 1 (head position)
38	NRO/PCL	Output	C	Deck FWD/REV head selector output/PCL clock output
39	SOL2	Output	C	Output for deck solenoid 2 (DIR selector and EJECT)
40	PEE	Output	C	Beep tone output
41	BSI	Input		Bus serial data input
42	BSO	Output	C	Bus serial data output
43	$\overline{\text{BSCK}}$	Input/Output	C	Bus serial clock input/output
44	$\overline{\text{MSIN}}$	Input		MS pulse/ Blank sensor input
45～48	$\overline{\text{KD3}}$～$\overline{\text{KD0}}$	Input		Key return input
49	KST0	Output	NM	Key strobe output
50	KST1	Output	NM	Key strobe output
51	NC			
52	$\overline{\text{BUSPW}}$	Output	NM	Bus power output
53	$\overline{\text{AUXR0}}$	Output	NM	AUX remote control output 0
54	$\overline{\text{AUXR1}}$	Output	NM	AUX remote control output 1
55	$\overline{\text{DCONT}}$	Output	NM	SWD VDD for key control IC(PD4285)
56	$\overline{\text{LCDPW}}$	Output	NM	LCD power supply control
57	NC			
58	VDD			
59	$\overline{\text{BRXEN}}$	Input/Output	C	Bus reception enable line
60	$\overline{\text{BSRQ}}$	Input/Output		Data communications serial poll request
61	BRST	Output	C	Bus reset
62	DISB	Output	C	AUX control output (Not used)
63	DILM	Output	C	Illumination green/amber selector output
64	MOTO	Output	C	Deck main motor control output

Output Format	Meaning
C	CMOS Output
NM	Neutral resistivity N channel open drain

● FM Front End (CWB1035)

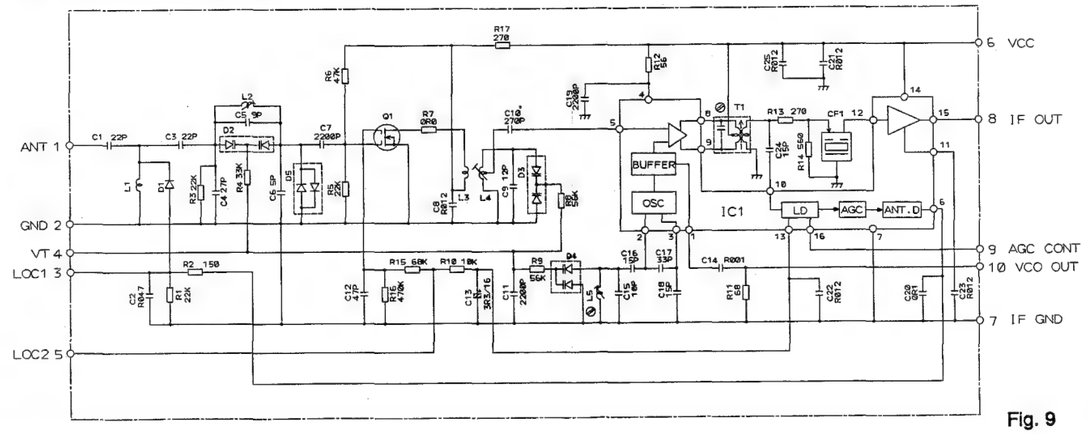
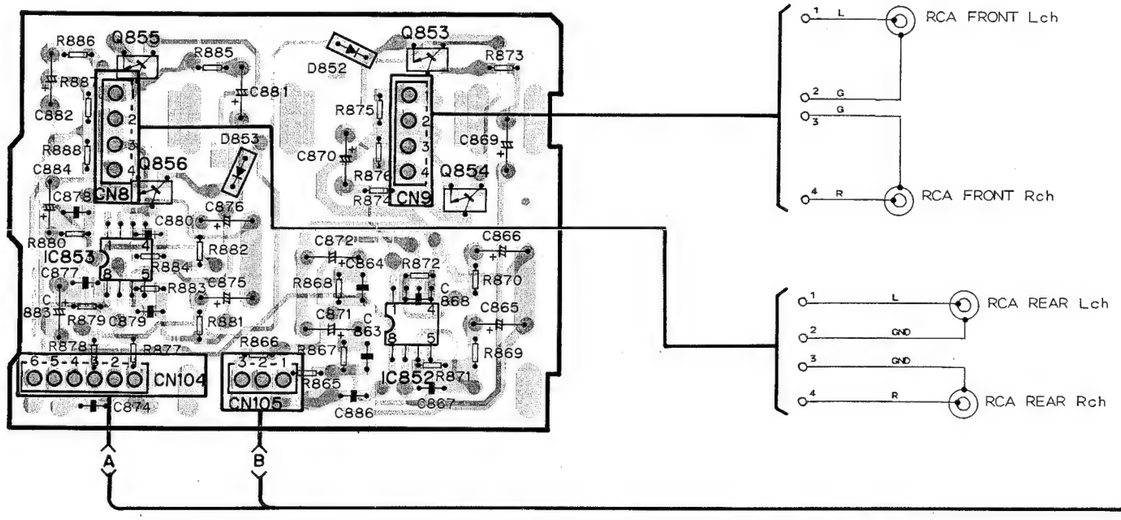


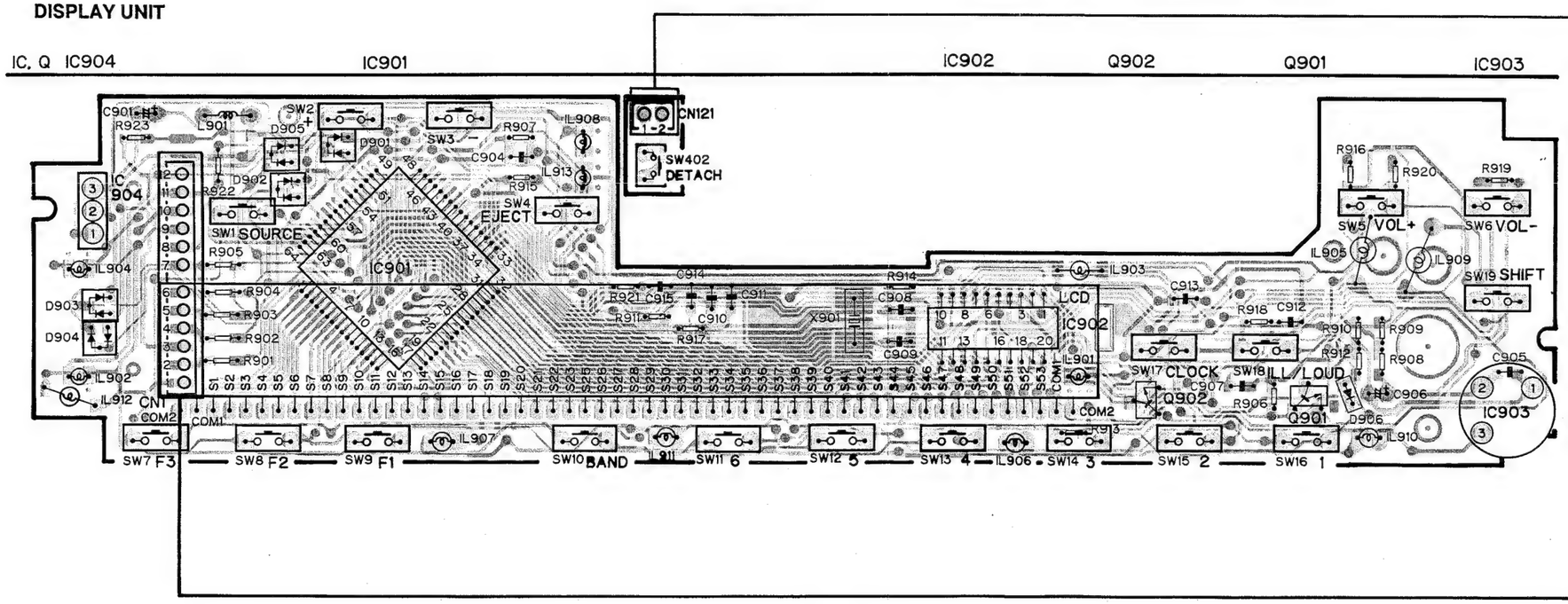
Fig. 9

9. CONNECTION DIAGRAM (KEH-M650/US, KEH-M8200/US, KEH-M8250/CA)

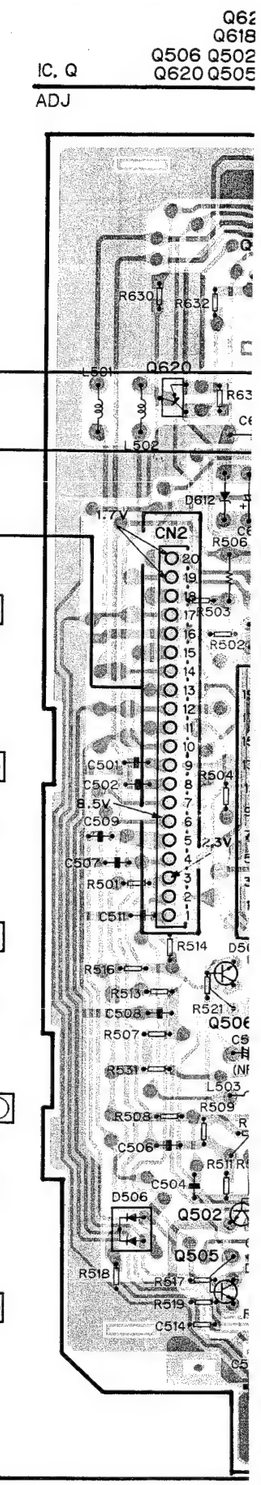
RCA OUT P. C. BOARD



DISPLAY UNIT



TUNER AMP P. C. BOA

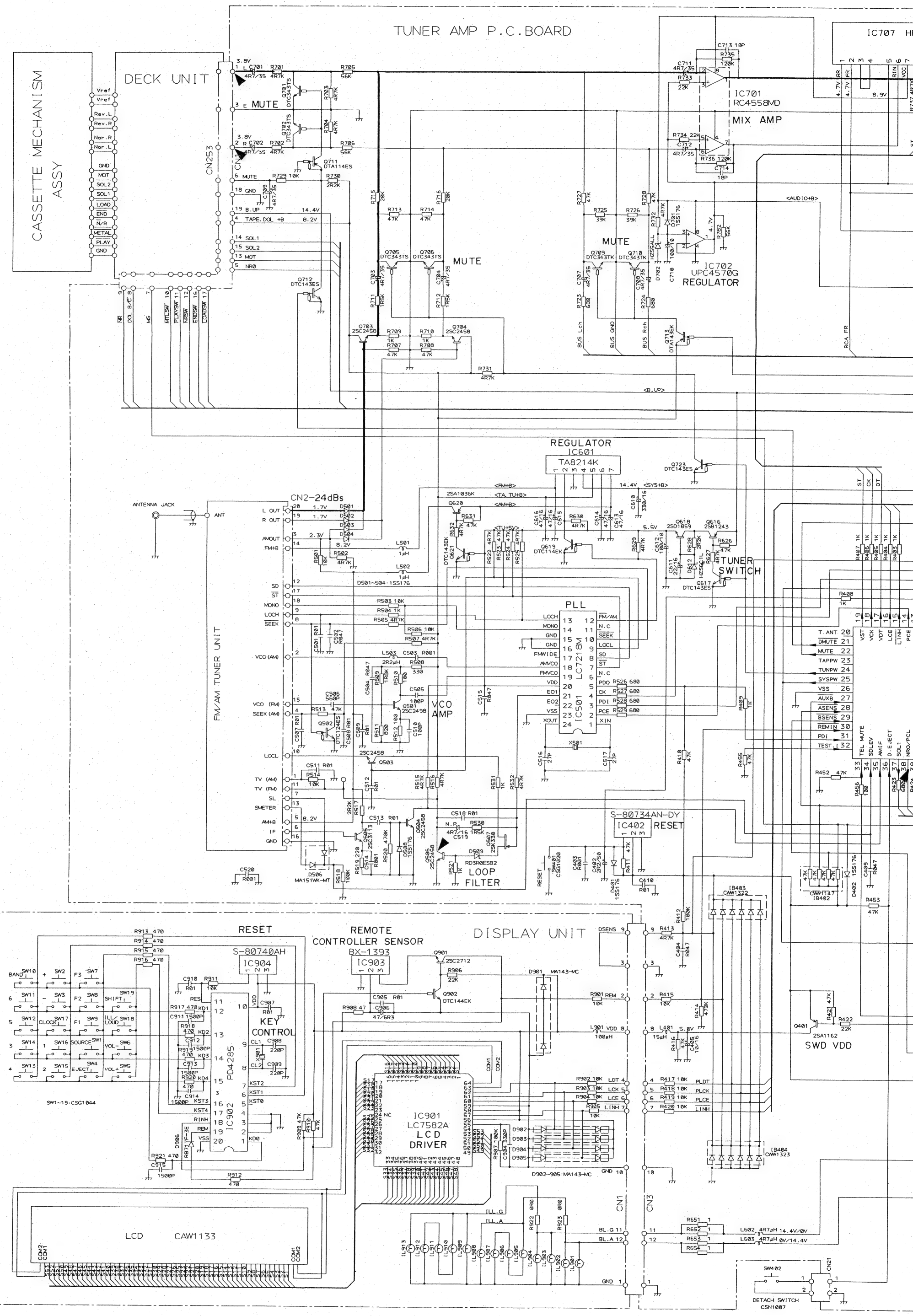


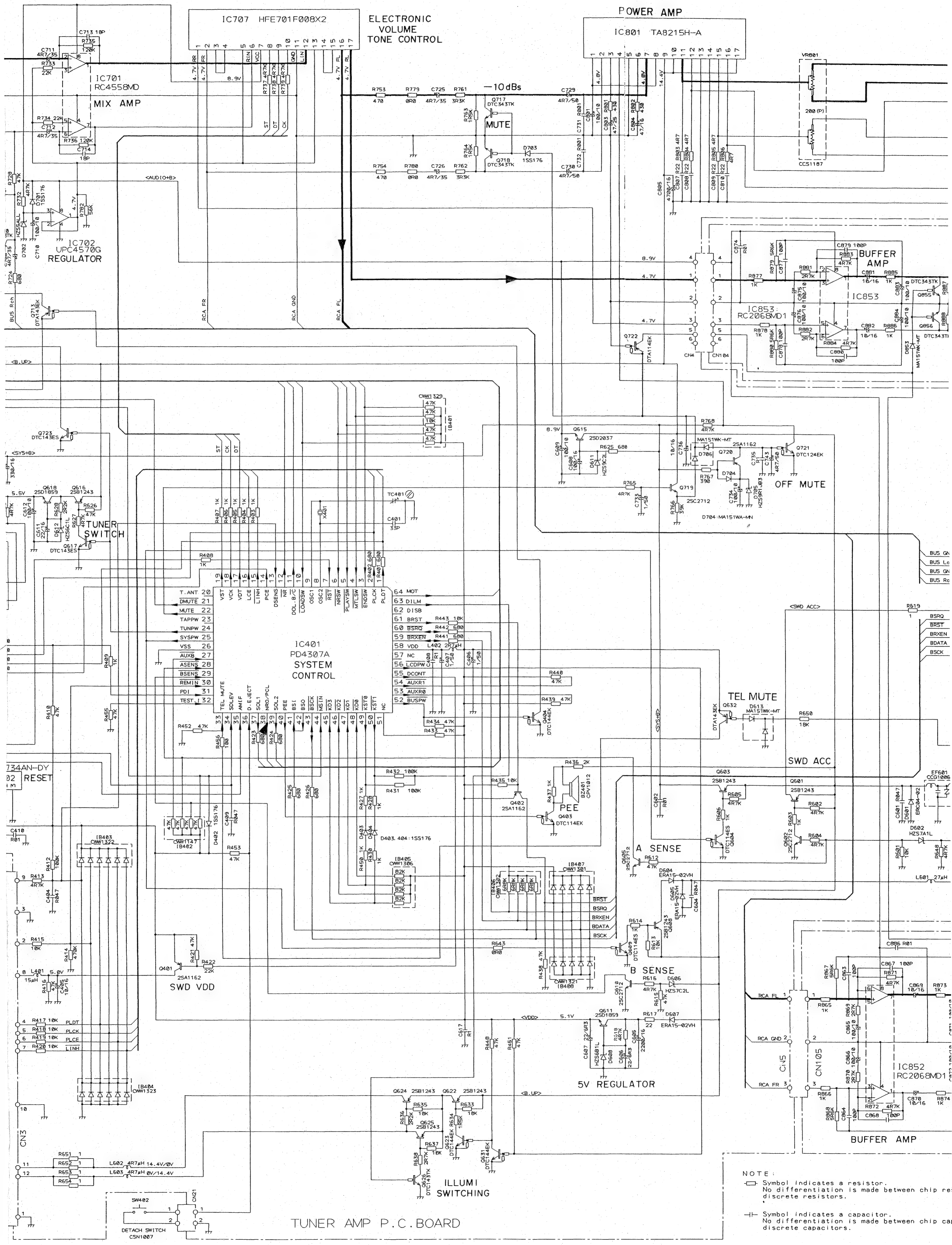
TUNER AMP P. C. BOARD

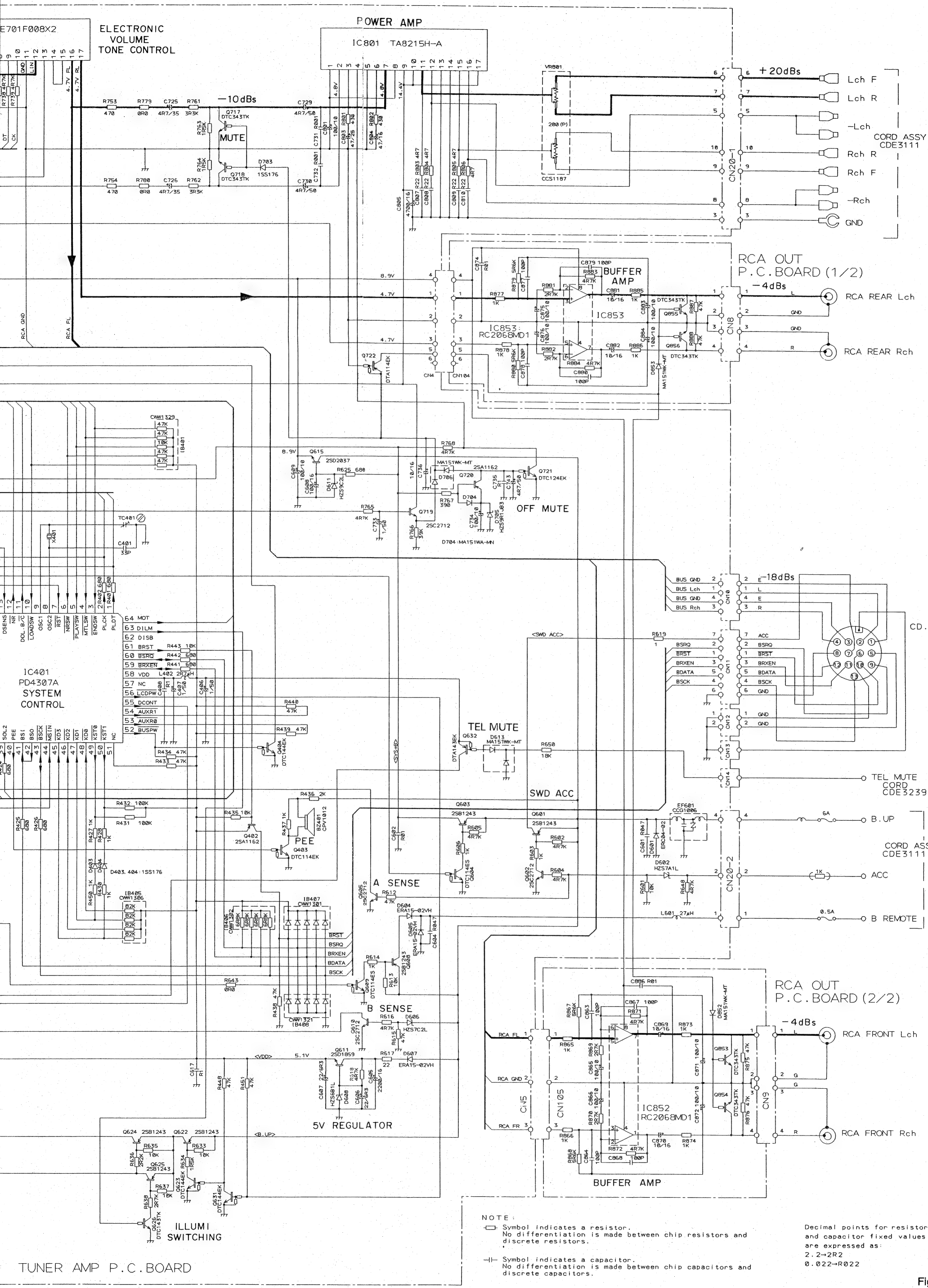
	7	8	9	10	11	12
IC, Q	Q621 Q618 Q506 Q620 Q502 Q505 Q703 Q507 Q704 Q501 Q616 Q504 Q503 Q611 Q619 Q712 Q617 Q711 IC501	Q401 Q706 Q705 Q702 Q701 Q402 Q723 Q706 Q709 Q710 Q713 IC701 Q609 Q615 Q608 Q404	Q604 IC702 Q722 IC401 Q603 IC601 Q631 Q605 Q602 IC707 Q601 Q626 Q624 Q610 Q623 Q625	Q717 Q403 Q622 Q718 Q719 Q632 Q721 Q720 IC402 IC801		
ADJ			TC401			

Fig. 10

10. SCHEMATIC CIRCUIT DIAGRAM (KEH-M650/US, KEH-M8200/US, KEH-M8250/CA)




IC707 HFE701F008X2
ELECTRONIC VOLUME TONE CONTROL
POWER AMP
IC801 TA8215H-A
IC701 RC4558MD
MIX AMP
IC702 UPC4570G REGULATOR
−10dBs
MUTE
VR801
CCS1187
200 (P)
BUFFER AMP
IC853 RC2068MD1
IC852 RC2068MD1
IC401 PD4307A SYSTEM CONTROL
TUNER SWITCH
SWD VDD
PEE
A SENSE
B SENSE
OFF MUTE
TEL MUTE
SWD ACC
5V REGULATOR
ILLUMI SWITCHING
D704:MA151WA-MN
DETACH SWITCH CSN1007
TUNER AMP P.C.BOARD
NOTE:
Symbol indicates a resistor.
No differentiation is made between chip re
discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip ca
discrete capacitors.



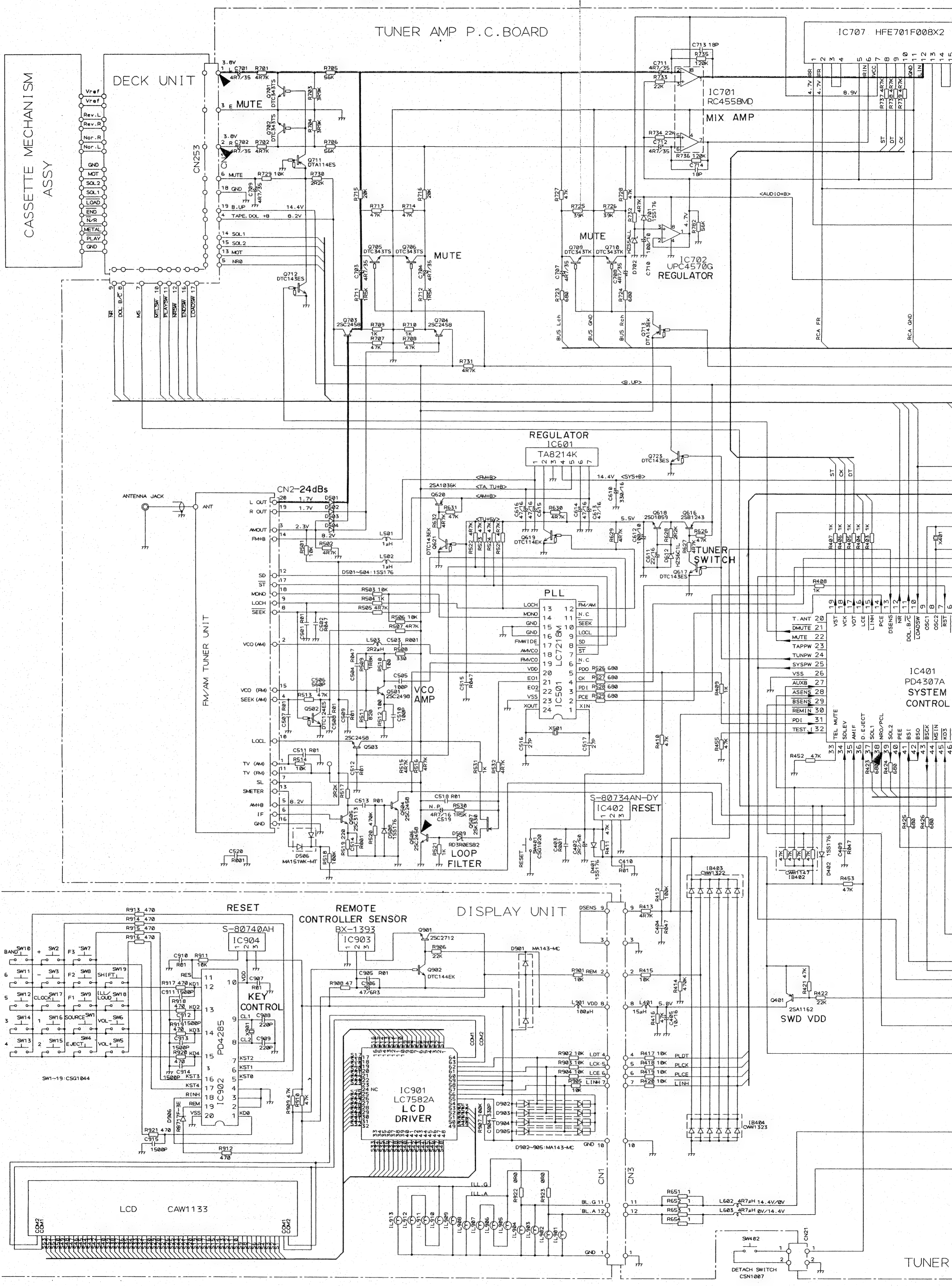
NOTE:

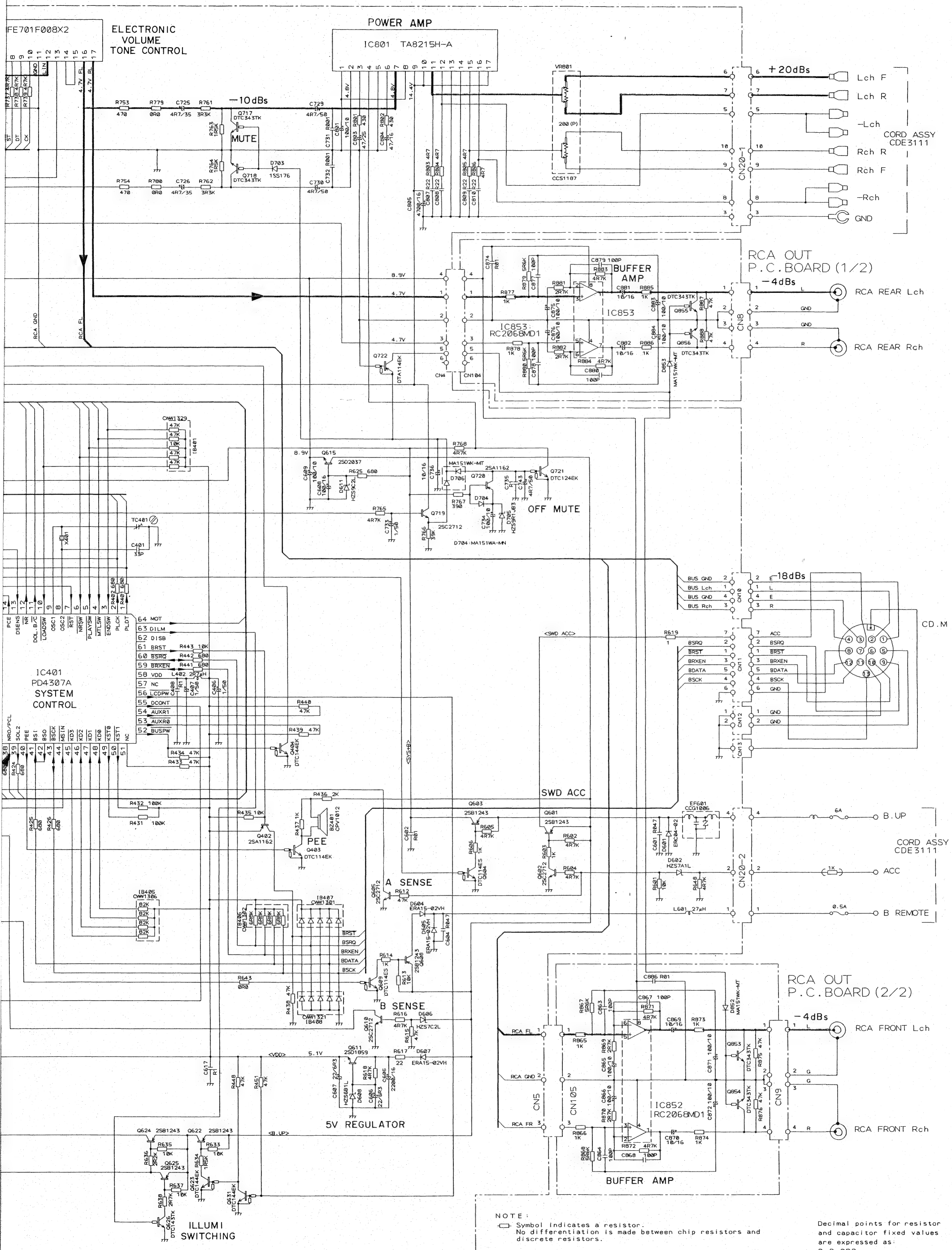
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 11

11. SCHEMATIC CIRCUIT DIAGRAM (KEH-M8250/CA)





NOTE:

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

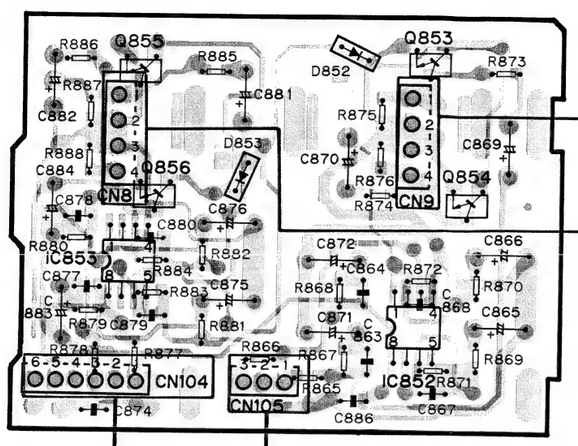
TUNER AMP P.C.BOARD

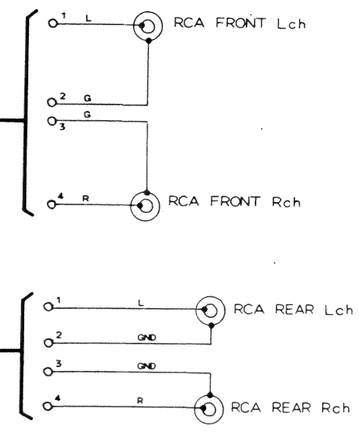
Fig. 12

12. CONNECTION DIAGRAM (KEH-M8250/ES)

RCA OUT P. C. BOARD

IC. Q Q855 IC853 Q856 IC852 Q853 Q854





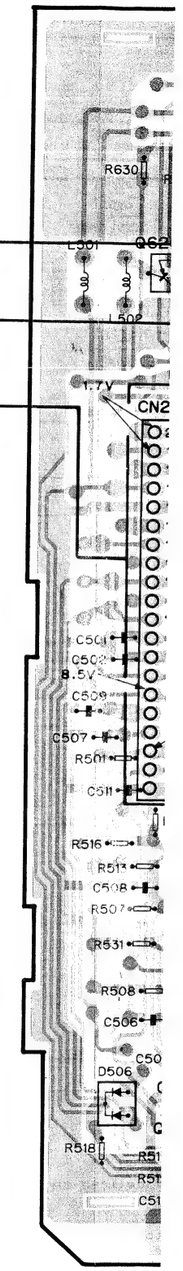
TO DECK UNIT CN253

TO FM/AM TUNER UNIT

TUNER AMP F

IC. Q Q50 Q62

ADJ



IB408 (7 6 5 4 3 2 1)

IB407 (7 6 5 4 3 2 1)

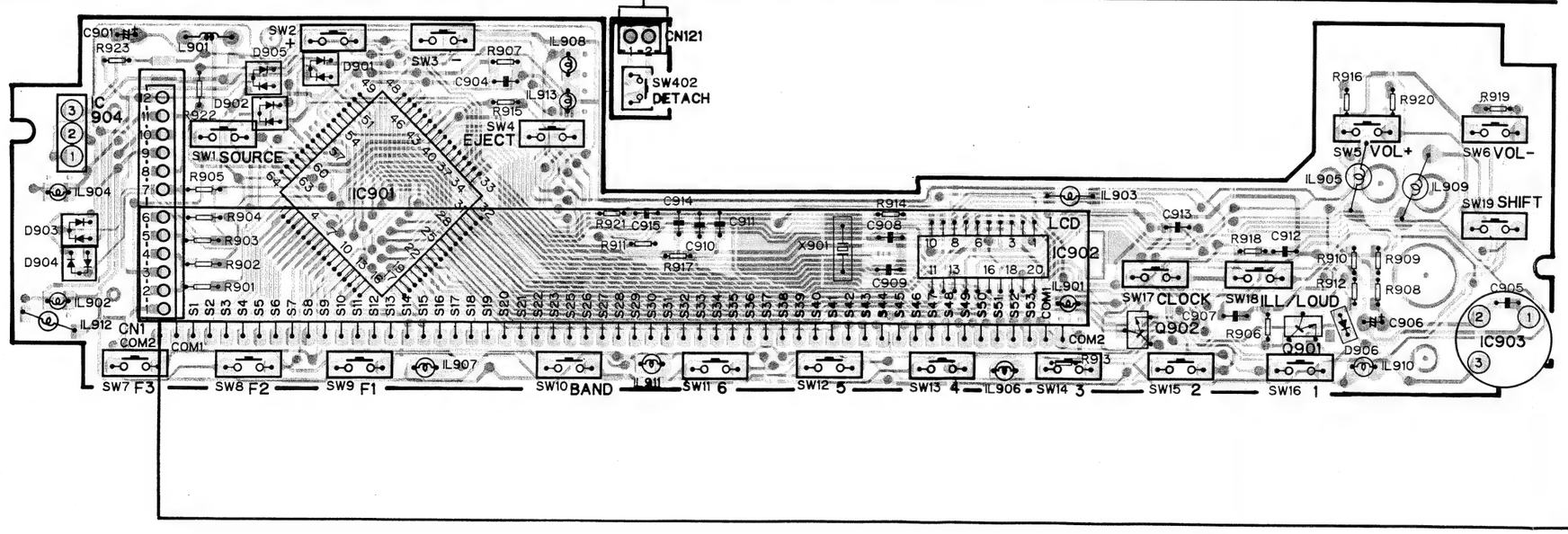
IB406 (5 4 3 2 1) 6.8k×4

IB403 (8 7 6 5 4 3 2 1)

IB404 (8 7 6 5 4 3 2 1)

DISPLAY UNIT

IC. Q IC904 IC901 IC902 Q902 Q901 IC903



TUNER AMP P. C. BOARD

IC. Q
Q620 Q505 Q504 Q503 IC501 Q701 Q706 Q713 IC401 IC601 Q605 Q602 Q624 Q626 Q625 Q622 Q721 Q720 IC402 IC801
Q506 Q502 Q501 Q616 Q619 Q711 Q702 Q723 Q710 Q609 Q608 Q722 Q631 Q626 Q623 Q403
Q621 Q618 Q507 Q704 Q611 Q617 Q705 Q402 Q709 Q615 Q404 Q604 IC702 Q603 Q601 Q610 Q717 Q719
Q703 Q712 Q706 IC701 IC707 Q718
Q401

ADJ
TC401

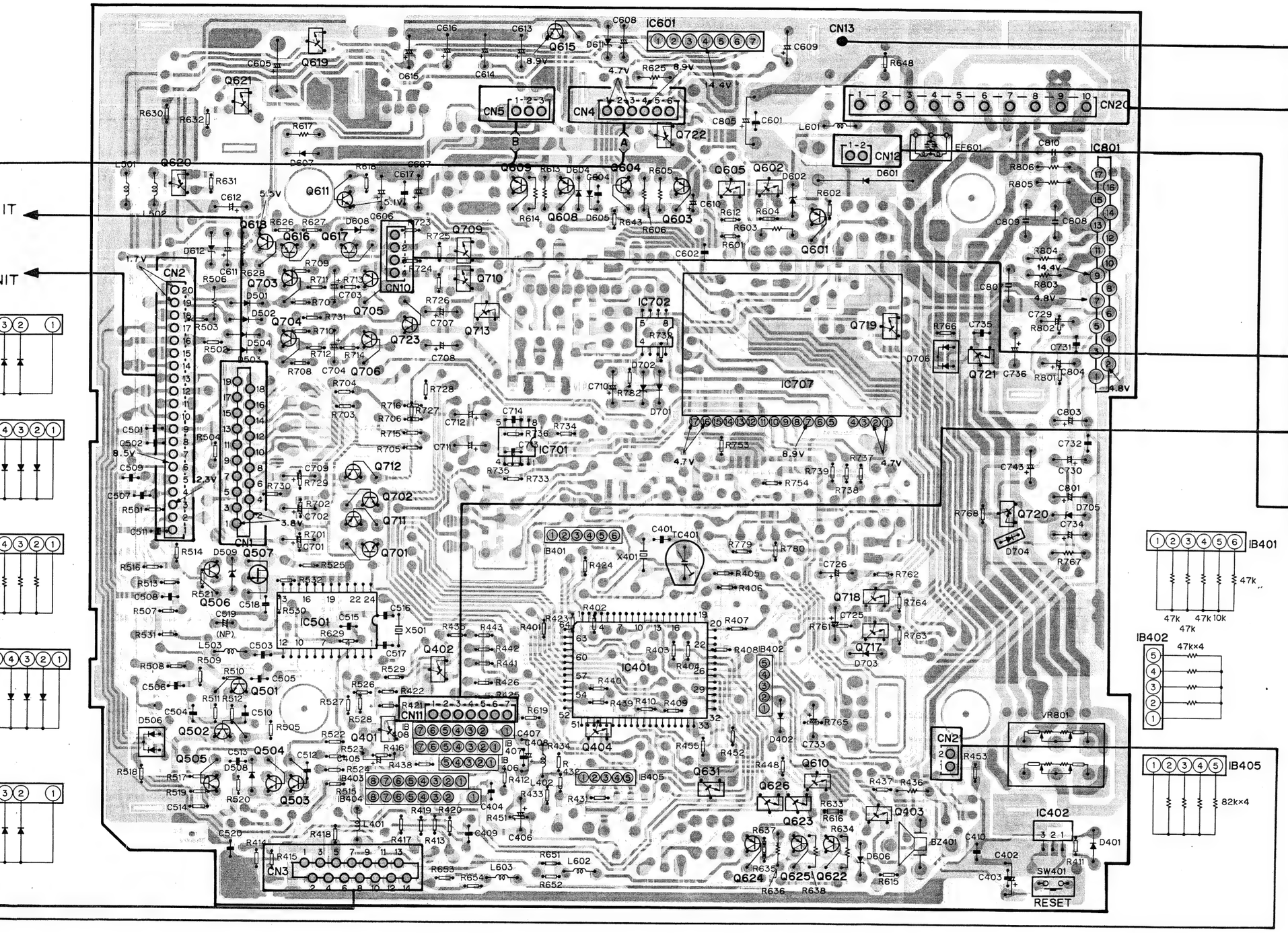
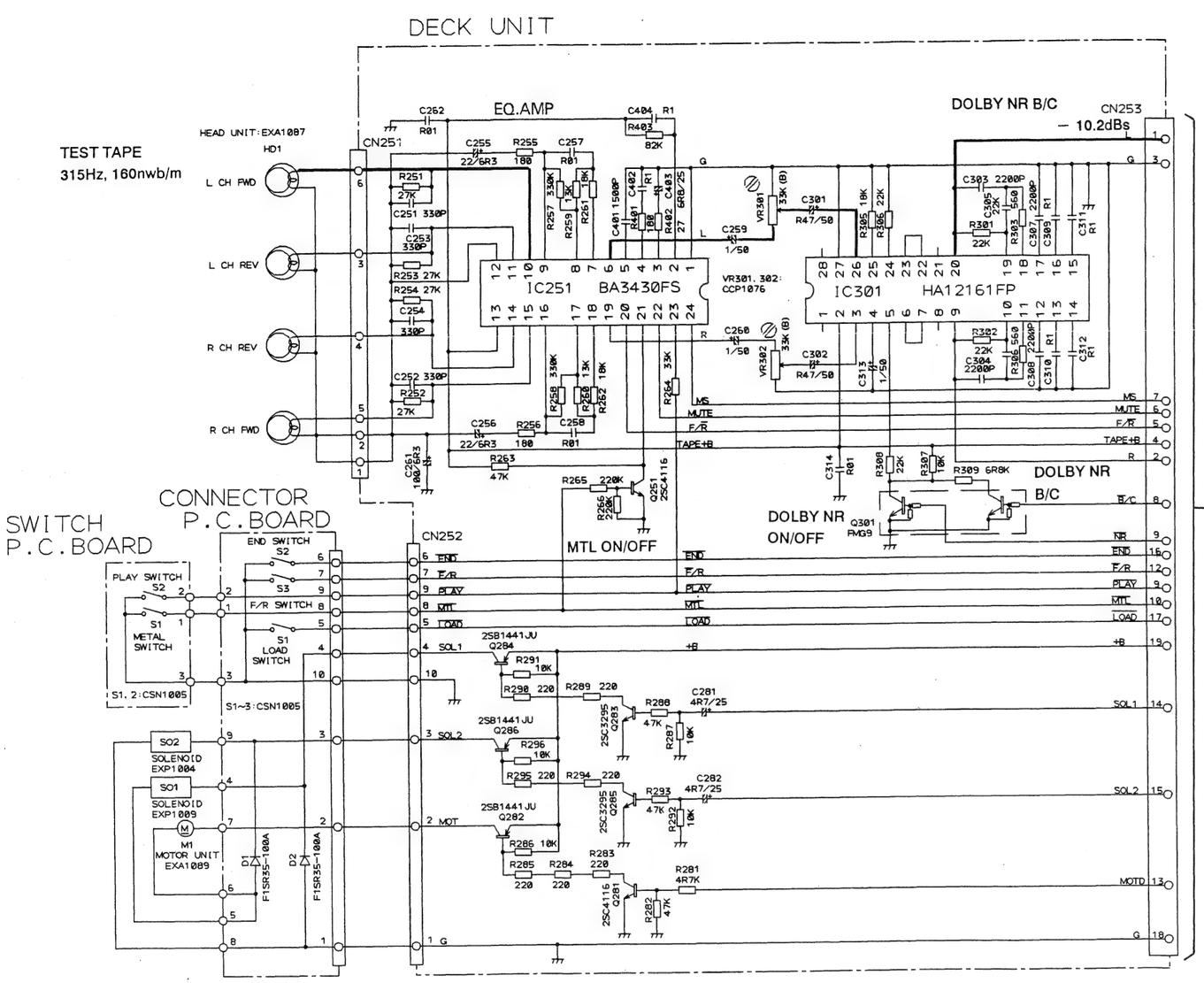


Fig. 13

13. CIRCUIT DIAGRAM AND P. C. BOARD PATTERN

● KEH-M650/US, KEH-M8250/CA (DECK UNIT)



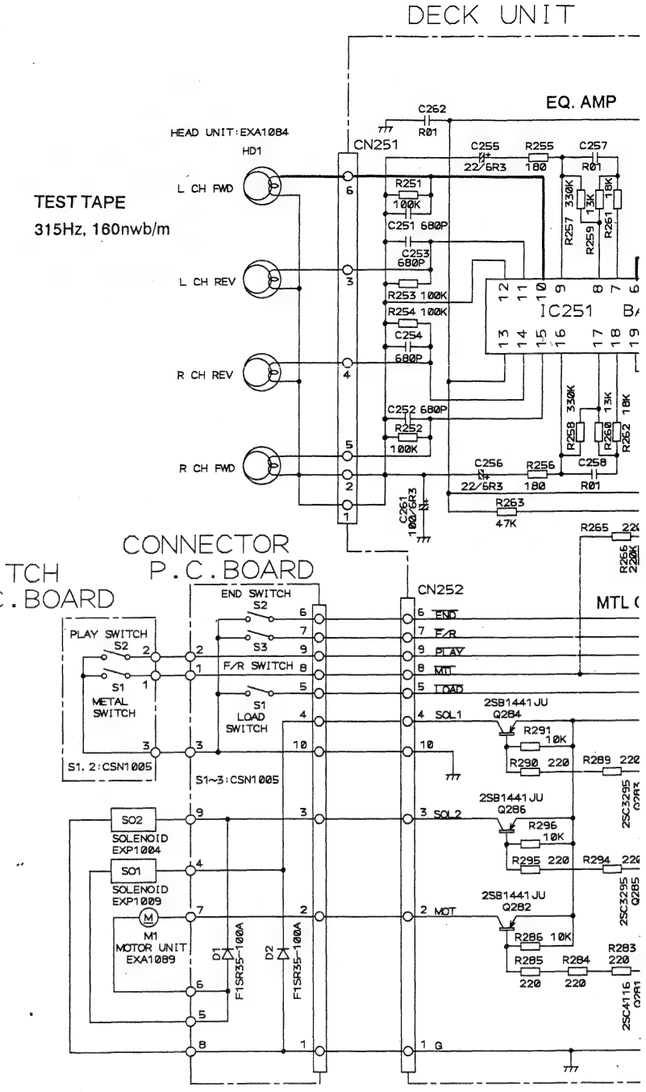
NOTE:

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 14

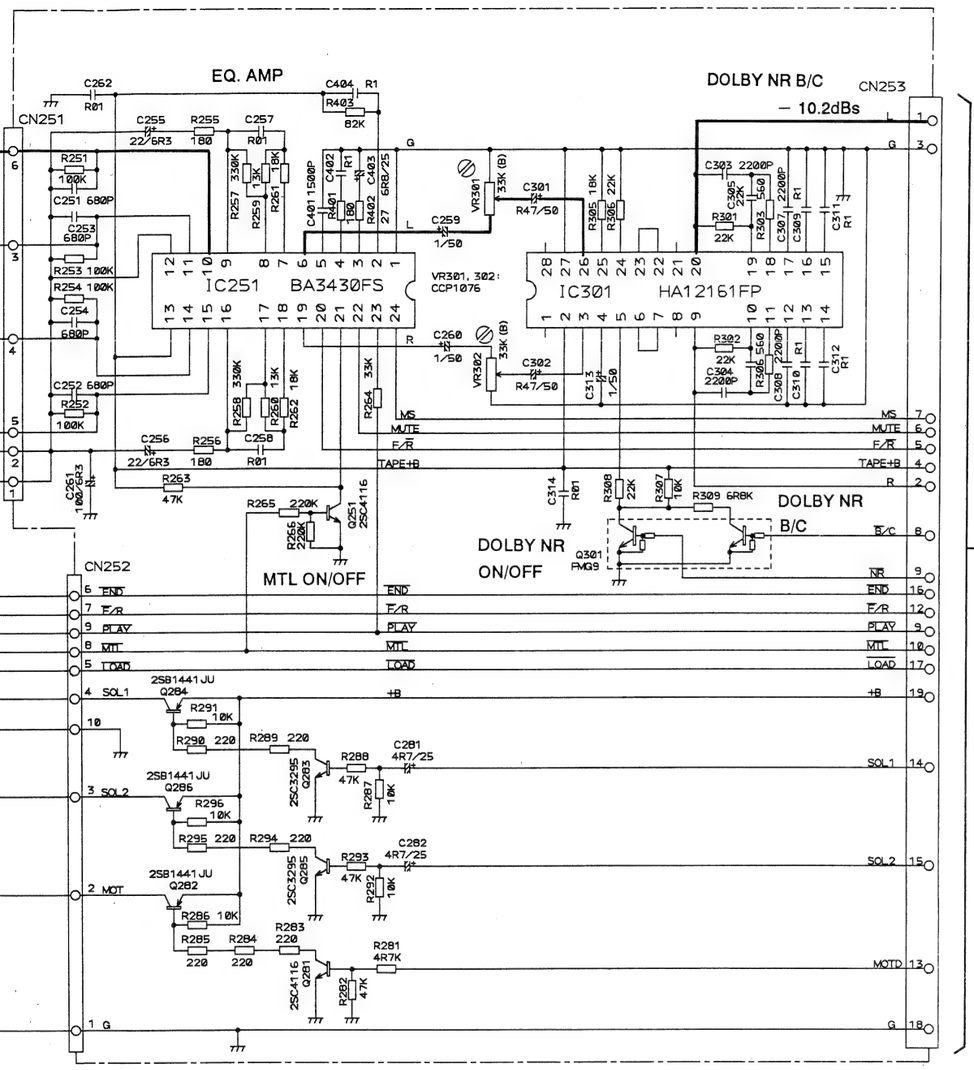
● KEH-M8200/US (DECK UNIT)



NOTE:

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

DECK UNIT



istor.
made between chip resistors and

acitor.
made between chip capacitors and

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 15

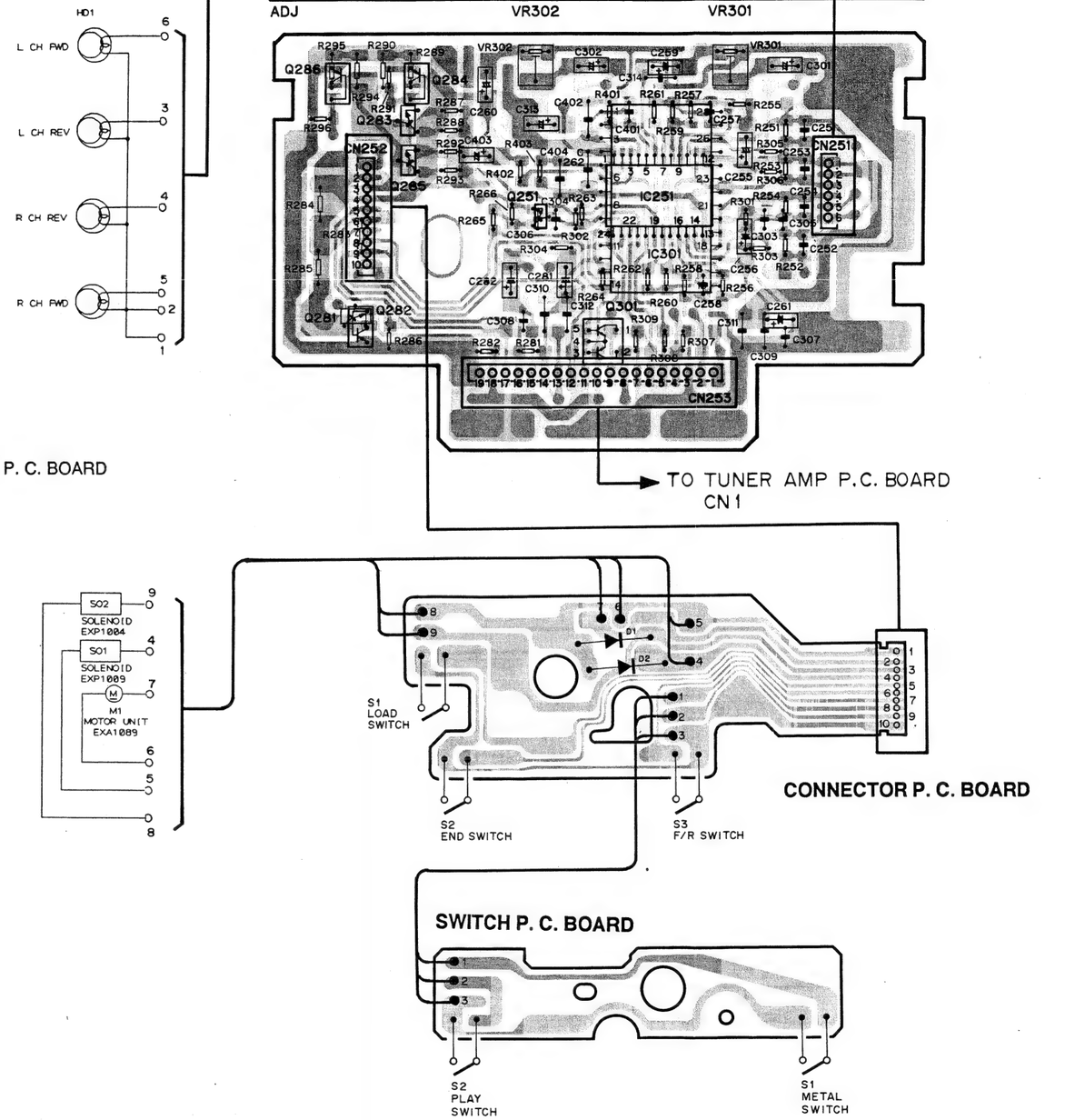
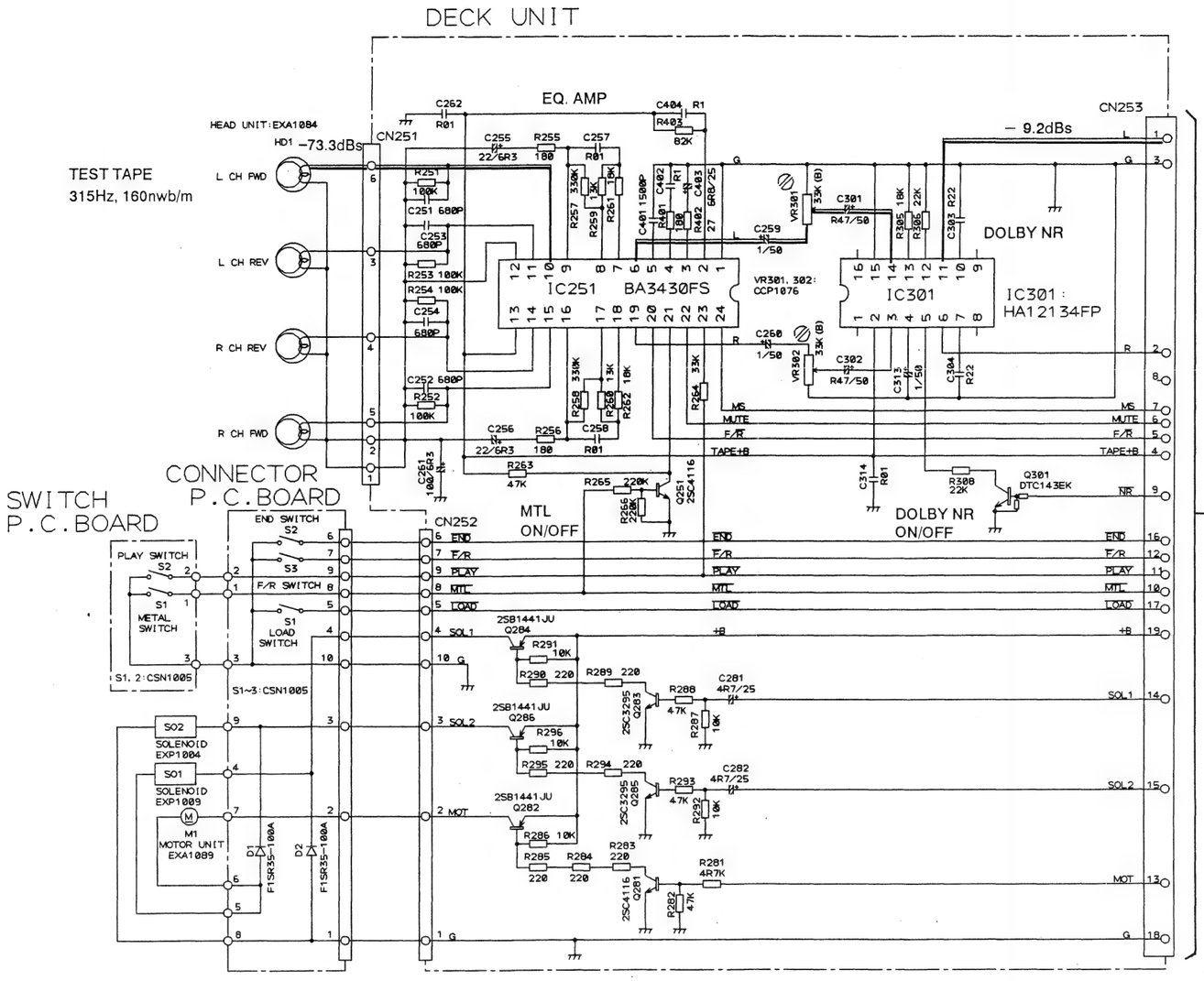
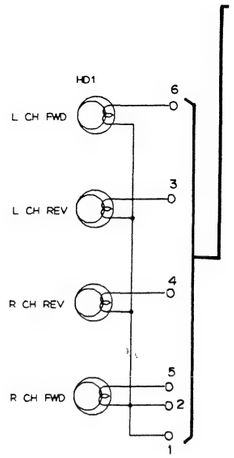
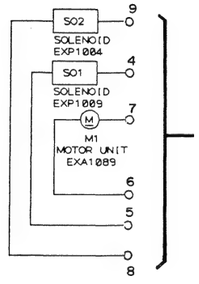


Fig. 16







NOTE:

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 17

● KEH-M8250/ES (DECK UNIT)

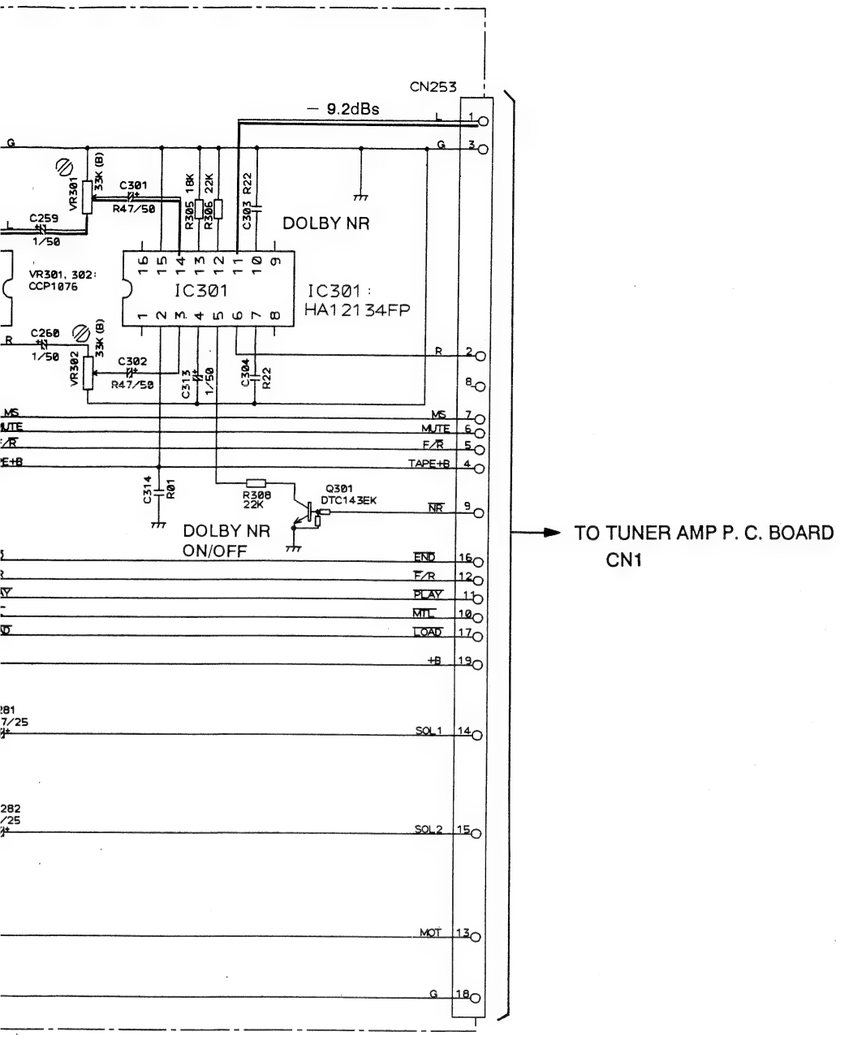


Fig. 17

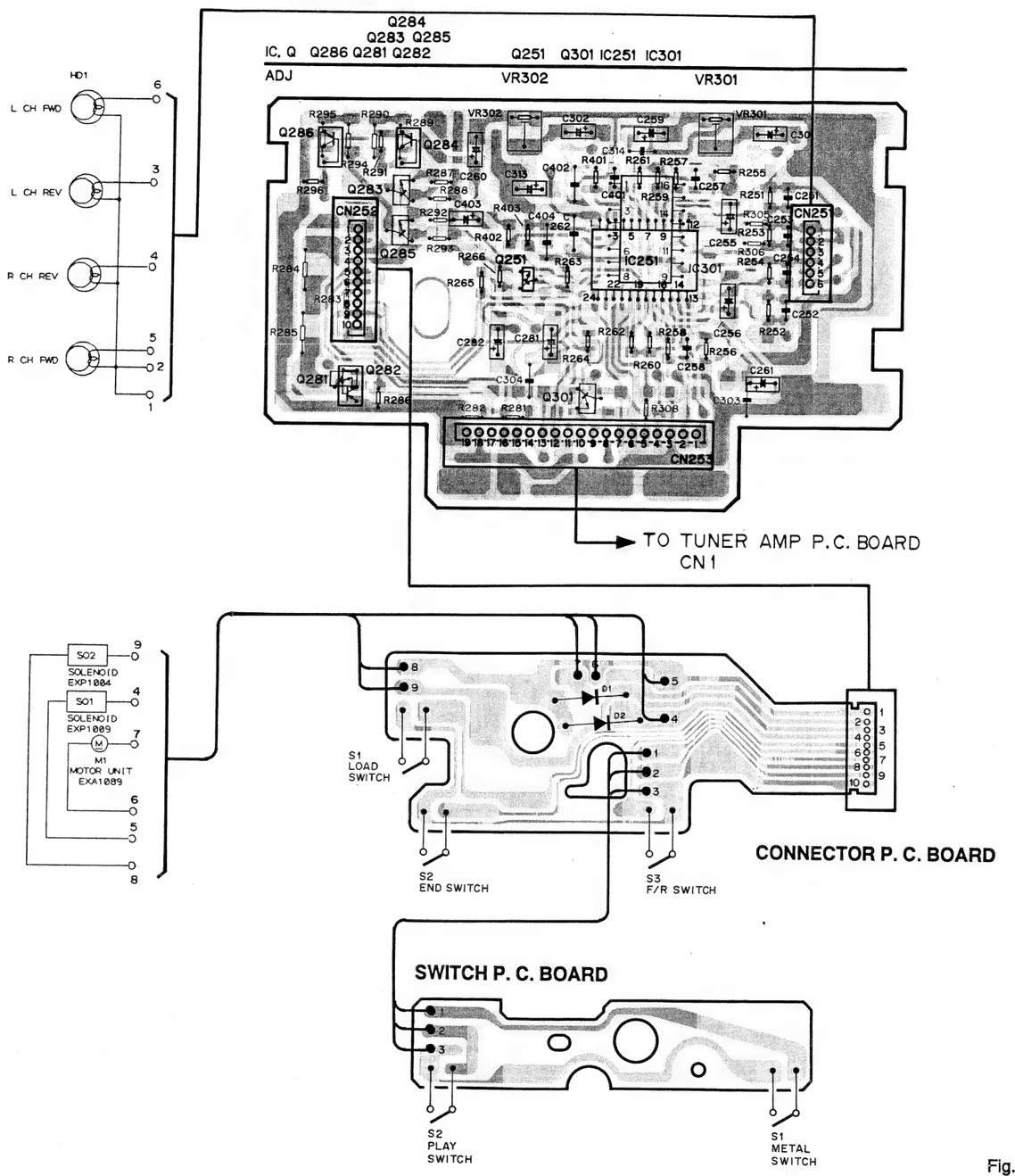
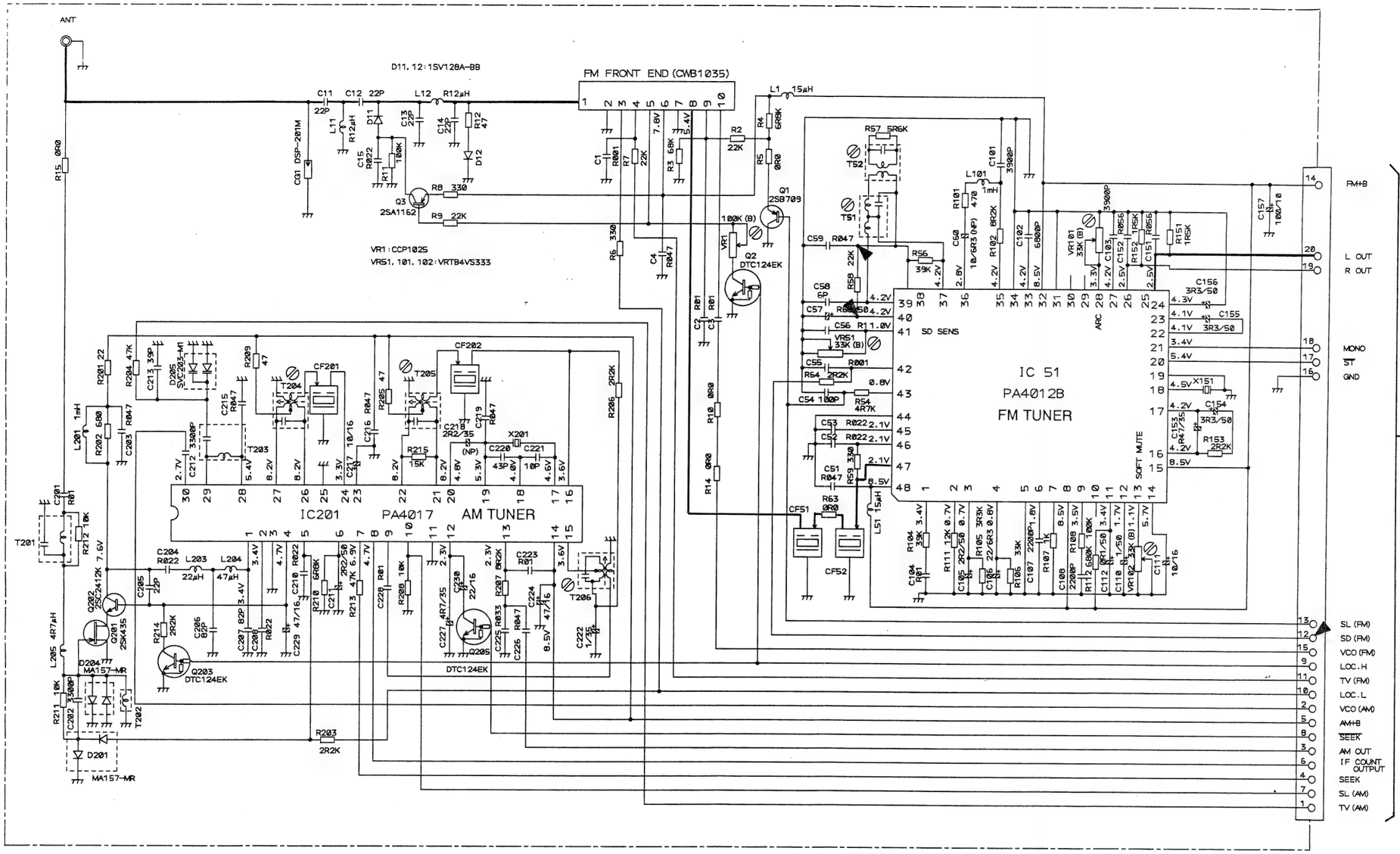


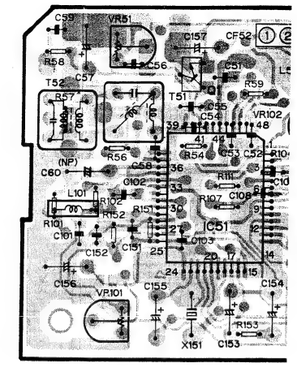
Fig. 18

● KEH-M650/US, KEH-M8200/US, KEH-M8250/CA (FM/AM TUNER UNIT)



TO TUNER AMP P. C. BOARD
CN2

IC, Q Q1 IC51
ADJ T52 VR101 VR51
T51



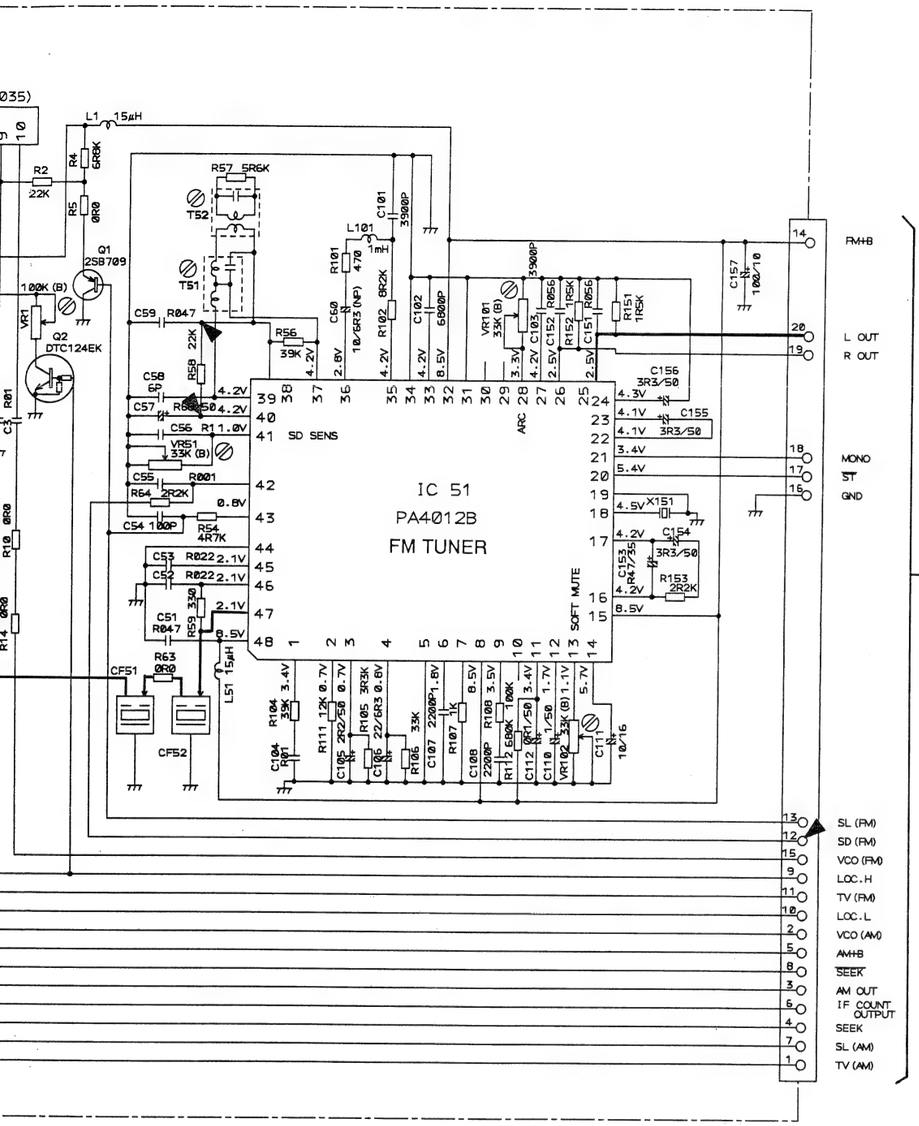
NOTE:

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 19



Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 19

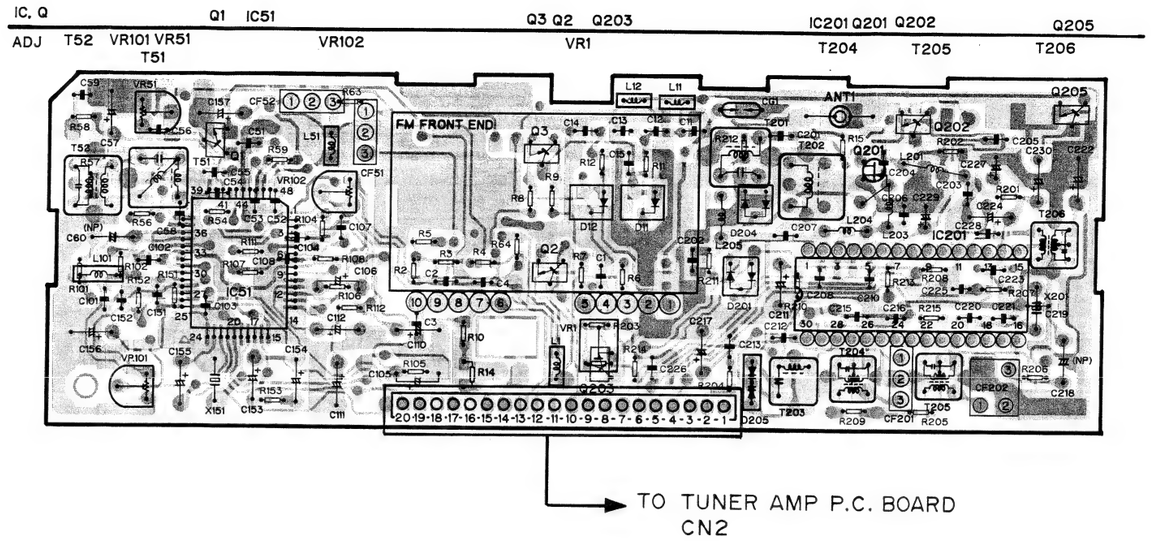
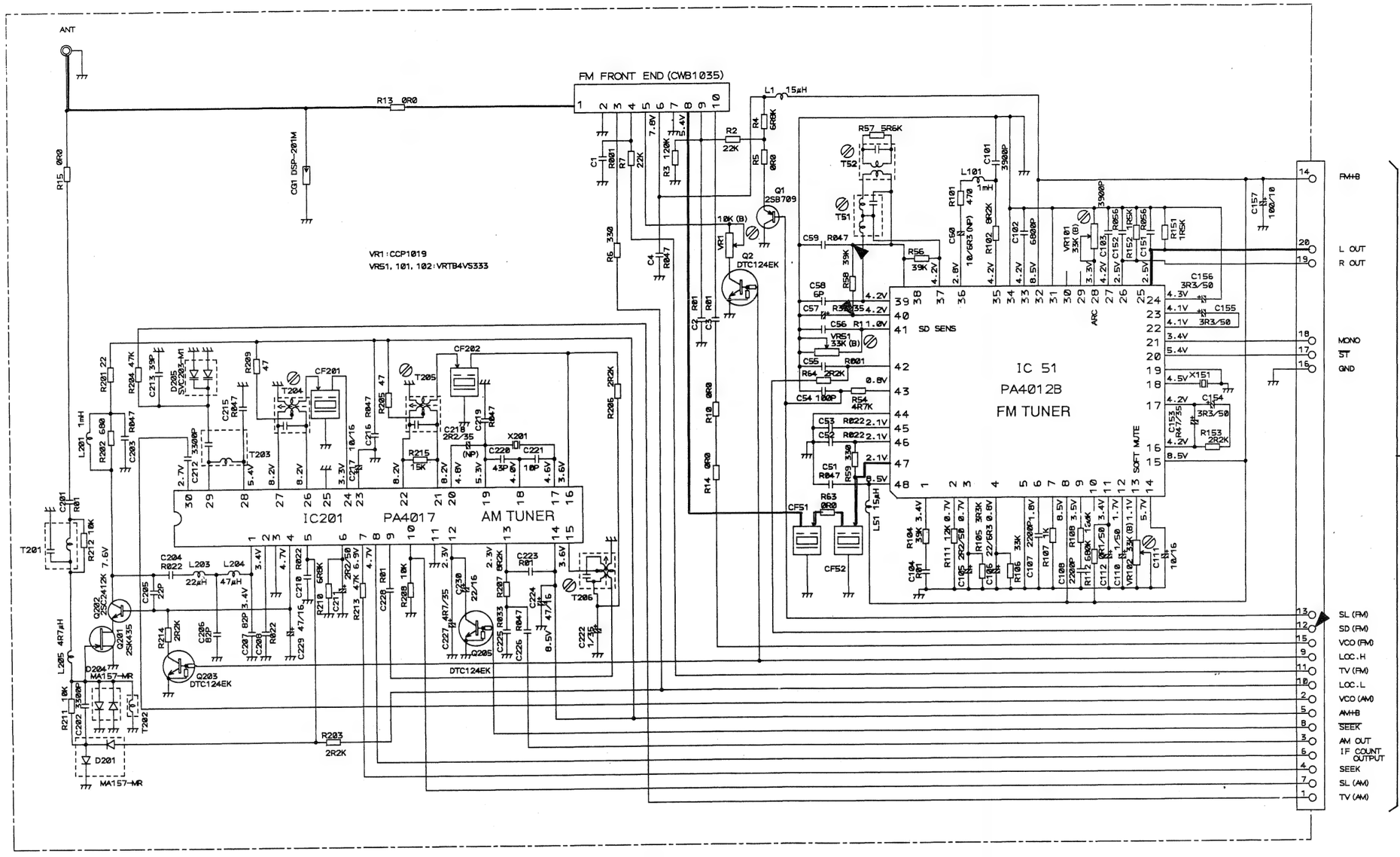
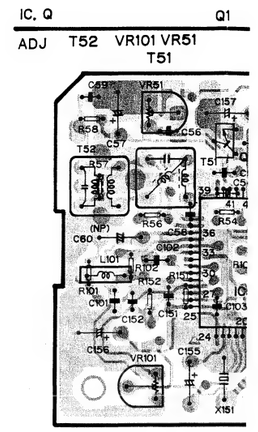


Fig. 20

● KEH-M8250/ES (FM/AM TUNER UNIT)



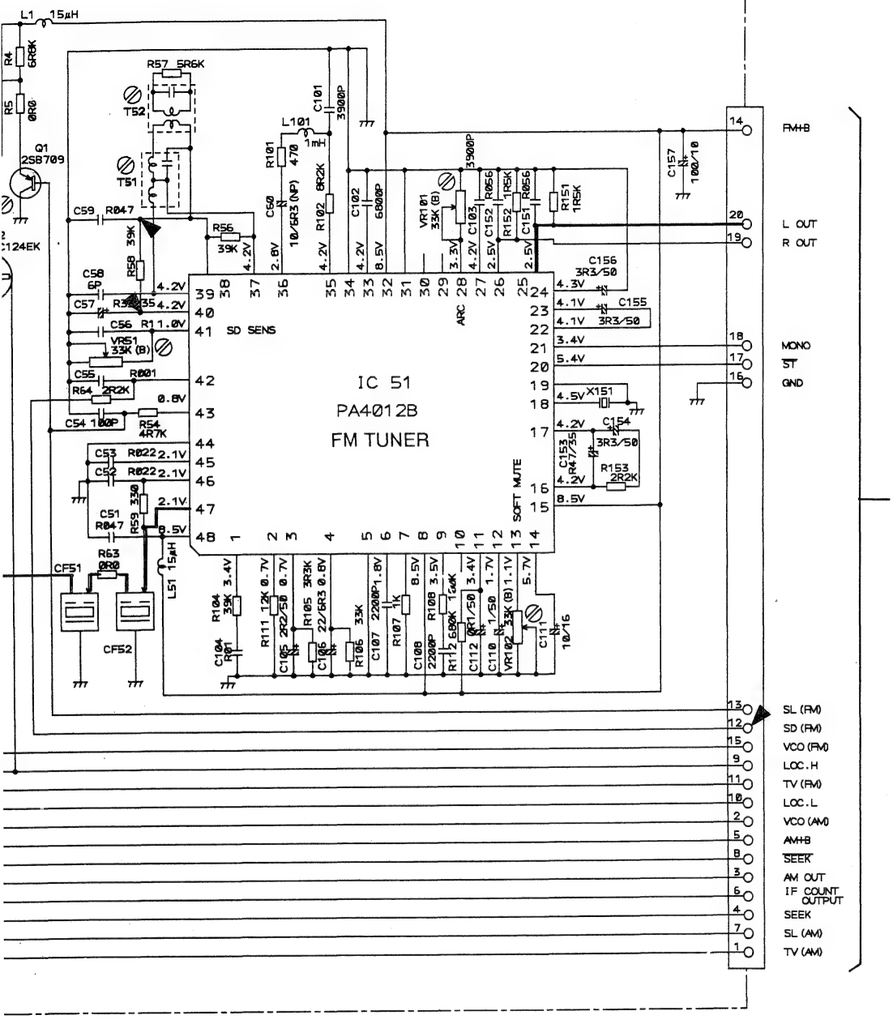


NOTE:

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 21



Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 21

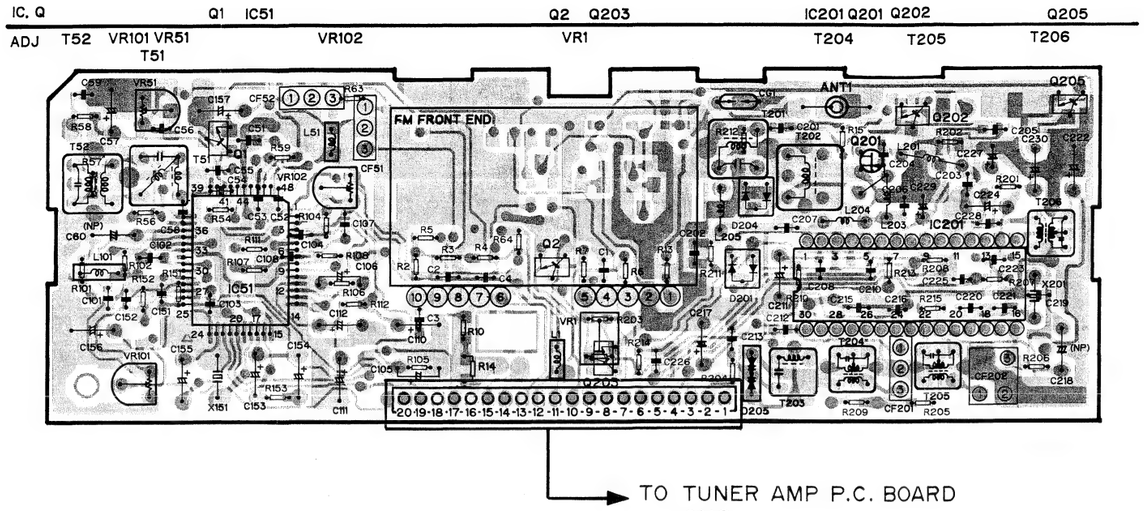


Fig. 22

14. CABINET EXPLODED VIEW

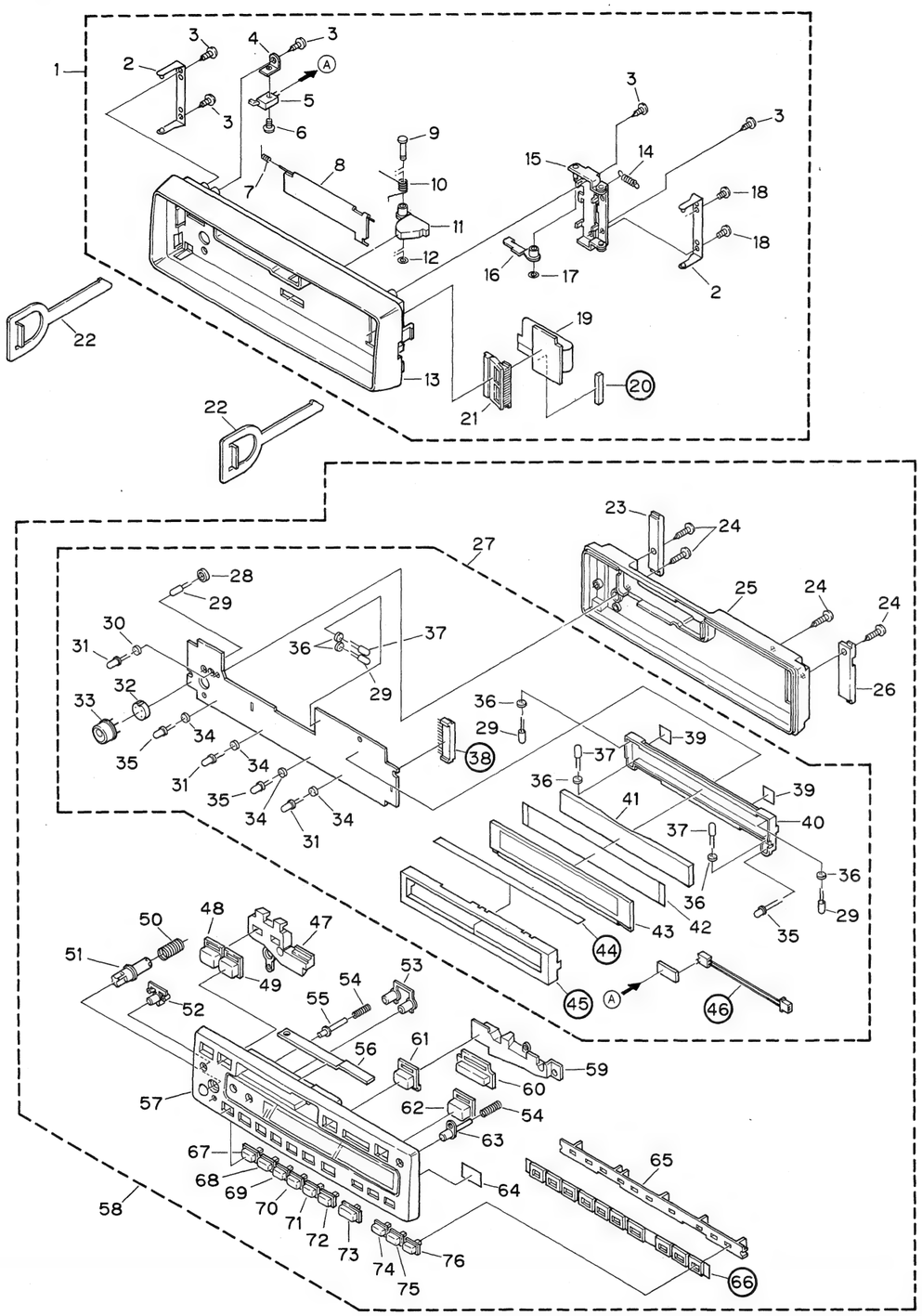


Fig. 23

NOTE:

- *The parts marked with "◉" may need long time to supply and their supply is subject to refuse as the case may be.*
- *Because the parts with encircled number shown on the dismantling drawing are not spare parts, we are unable to supply them in principle.*

● Parts List (KEH-M650/US)

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Panel Assy	CXA4070	41	Lens	CNV2673
2	Holder Unit	CXA4354	42	Half Mirror	CNM3131
3	Screw	BPZ20P060FMC	43	LCD	CAW1133
4	Holder	CNC3645	44	Insulator	CNM2986
5	Switch	CSN1007	45	Holder	CNC3559
6	Screw	CBA-172	46	Connector	CDE3330
7	Spring	CBH1350	47	Lens	CNV2674
8	Door	CAT1357	48	Button(VOLUME -)	CAC2799
9	Shaft	CLA1878	49	Button(VOLUME +)	CAC2800
10	Spring	CBH1383	50	Spring	CBH1385
11	Arm	CNV2670	51	Knob(FADER)	CAA1249
12	Washer	CBF1038	52	Button(SHIFT)	CAC2798
13	Panel	CNS2143	53	Button(LOUD/CLOCK)	CAC2794
14	Spring	CBH1395	54	Spring	CBH1384
15	Holder Unit	CXA3834	55	Button(RESET)	CAC2793
16	Arm Unit	CXA3868	56	Spacer	CNC3560
17	Washer	CBF1037	57	Grille Unit	CXA4294
18	Screw	PMZ20P030FMC	58	Grille Assy	CXA4071
19	P.C.Board	CNP2580	59	Lens	CNV2676
20	Spacer	CNM3063	60	Button(MS)	CAC2796
21	Socket	CKS1664	61	Button(EJECT)	CAC2795
22	Handle	CNC3664	62	Button(SOURCE)	CAC2797
23	Stopper	CNR1191	63	Button(DETACH)	CAC2791
24	Screw	BPZ20P120FZK	64	Film	CNM3080
25	Cover	CNS2142	65	Lens	CNV2675
26	Stopper	CNR1190	66	Cushion	CNM3031
◉ 27	Display Unit	CWS1206	67	Button(1)	CAC2801
28	Bush	CNV-724	68	Button(2)	CAC2802
29	Lamp	CEL-147	69	Button(3)	CAC2803
30	Spacer	CNW-662	70	Button(4)	CAC2804
31	Lamp	CEL1205	71	Button(5)	CAC2805
32	Spacer	CNW2734	72	Button(6)	CAC2806
33	IC	BX-1393	73	Button(BAND)	CAC2807
34	Spacer	CNW-805	74	Button(F1)	CAC2808
35	Lamp	CEL1204	75	Button(F2)	CAC2809
36	Spacer	CNV2761	76	Button(F3)	CAC2810
37	Lamp	CEL1025			
38	Plug	CKS2007			
39	Film	CNM3135			
40	Housing	CNV2671			

)TE:
The parts marked with "◉" may need long time to supply and their supply is subject to refuse as the case may be.
Because the parts with encircled number shown on the dismantling drawing are not spare parts, we are unable to supply them in principle.

Parts List (KEH-M650/US)

rk No.	Description	Part No.	Mark No.	Description	Part No.
1	Panel Assy	CXA4070	41	Lens	CNV2673
2	Holder Unit	CXA4354	42	Half Mirror	CNM3131
3	Screw	BPZ20P060FMC	43	LCD	CAW1133
4	Holder	CNC3645	44	Insulator	CNM2986
5	Switch	CSN1007	45	Holder	CNC3559
6	Screw	CBA-172	46	Connector	CDE3330
7	Spring	CBH1350	47	Lens	CNV2674
8	Door	CAT1357	48	Button(VOLUME -)	CAC2799
9	Shaft	CLA1878	49	Button(VOLUME +)	CAC2800
10	Spring	CBH1383	50	Spring	CBH1385
11	Arm	CNV2670	51	Knob(FADER)	CAA1249
12	Washer	CBF1038	52	Button(SHIFT)	CAC2798
13	Panel	CNS2143	53	Button(LOUD/CLOCK)	CAC2794
14	Spring	CBH1395	54	Spring	CBH1384
15	Holder Unit	CXA3834	55	Button(RESET)	CAC2793
16	Arm Unit	CXA3868	56	Spacer	CNC3560
17	Washer	CBF1037	57	Grille Unit	CXA4294
18	Screw	PMZ20P030FMC	58	Grille Assy	CXA4071
19	P.C.Board	CNP2580	59	Lens	CNV2676
20	Spacer	CNM3063	60	Button(MS)	CAC2796
21	Socket	CKS1664	61	Button(EJECT)	CAC2795
22	Handle	CNC3664	62	Button(SOURCE)	CAC2797
23	Stopper	CNR1191	63	Button(DETACH)	CAC2791
24	Screw	BPZ20P120FZK	64	Film	CNM3080
25	Cover	CNS2142	65	Lens	CNV2675
26	Stopper	CNR1190	66	Cushion	CNM3031
◉ 27	Display Unit	CWS1206	67	Button(1)	CAC2801
28	Bush	CNV-724	68	Button(2)	CAC2802
29	Lamp	CEL-147	69	Button(3)	CAC2803
30	Spacer	CNW-662	70	Button(4)	CAC2804
31	Lamp	CEL1205	71	Button(5)	CAC2805
32	Spacer	CNW2734	72	Button(6)	CAC2806
33	IC	BX-1393	73	Button(BAND)	CAC2807
34	Spacer	CNW-805	74	Button(F1)	CAC2808
35	Lamp	CEL1204	75	Button(F2)	CAC2809
36	Spacer	CNV2761	76	Button(F3)	CAC2810
37	Lamp	CEL1025			
38	Plug	CKS2007			
39	Film	CNM3135			
40	Housing	CNV2671			

Mark No.	Description	KEH-M650/US Part No.	KEH-M8200/US Part No.	KEH-M8250/CA Part No.	KEH-M8250/ES Part No.
1	Panel Assy	CXA4070	CXA4070	CXA4070	CXA4073
8	Door	CAT1357	CAT1357	CAT1357	CAT1379
57	Grille Unit	CXA4294	CXA4295	CXA4297	CXA4296
58	Grille Assy	CXA4071	CXA4068	CXA4077	CXA4074
60	Button(MS)	CAC2796	CAC2796	CAC2796	CAC2906

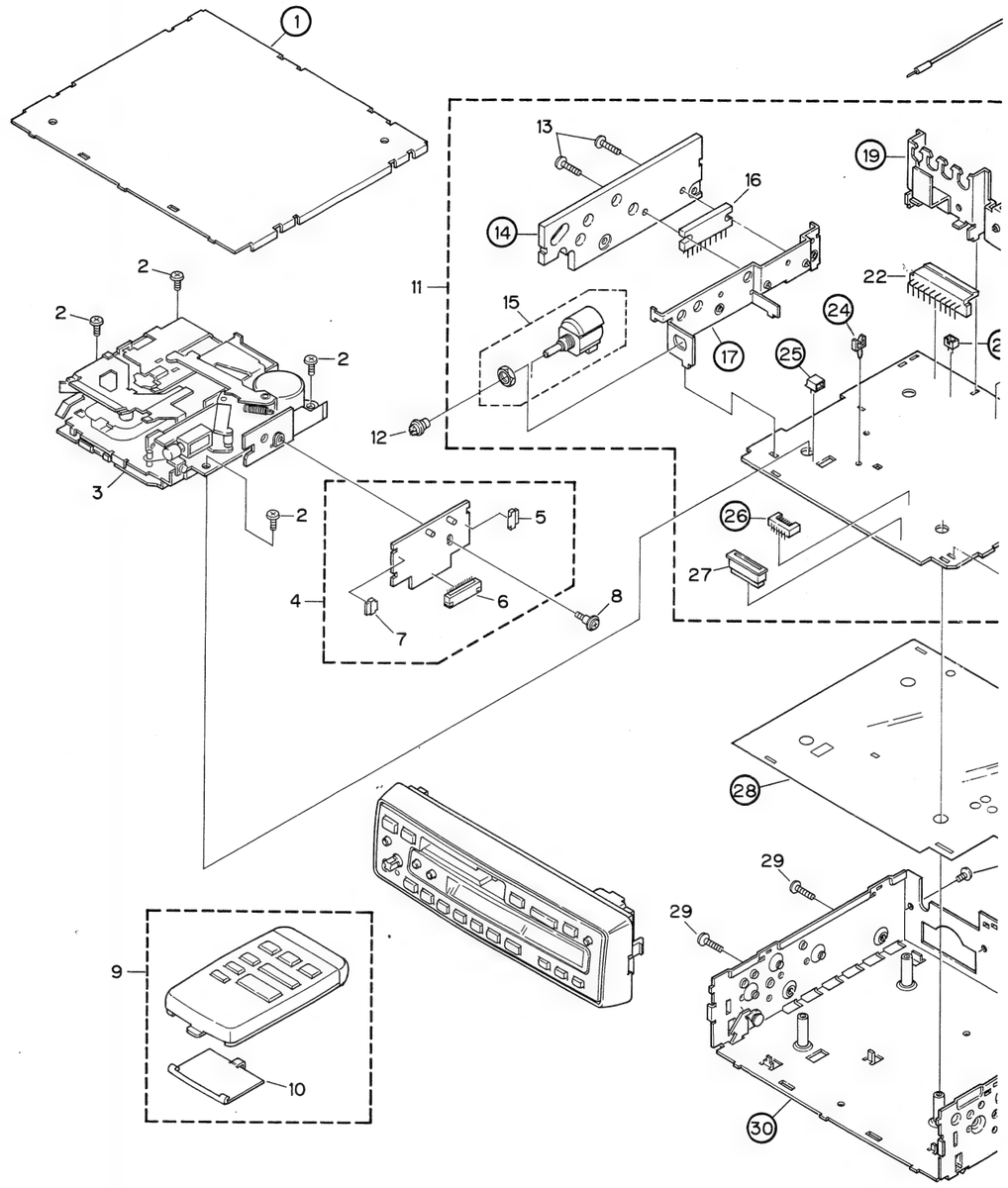
15. CHASSIS EXPLODED VIEW

Mark No.	Description	KEH-M650/US Part No.	KEH-M8200/US Part No.	KEH-M8250/CA Part No.	KEH-M8250/ES Part No.
◉ 3	Cassette Mechanism Assy	EXK1460	EXK1450	EXK1460	EXK1450
◉ 4	Deck Unit	CWM2178	CWM2176	CWM2178	CWM2175
9	Remote Control Assy	CXA4105	CXA4106	CXA4106	CXA4107
◉ 11	Tuner Amp Unit	CWM2617	CWM2617	CWM2617	CWM2618
18	Cord	CDE3292	CDE3292	CDE3292	·····
34	Connector	CDE3106	CDE3104	CDE3106	CDE3104
35	Connector	CDE3105	CDE3103	CDE3105	CDE3103
36	Cap	CNV2680	CNW-829	CNW-829	CNW-829
◉ 46	FM/AM Tuner Unit	CWE1225	CWE1225	CWE1225	CWE1226

● Parts List (KEH-M650/US)

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Case	CNB1430		30	Chassis Unit	CXA3832
	2	Screw	BMZ26P050FMC		31	Bush	CNV1009
◉	3	Cassette Mechanism Assy	EXK1460		32	Screw	CBA1002
					33	Holder	CNC3565
◉	4	Deck Unit	CWM2178		34	Connector	CDE3106
	5	Connector	CkS1773		35	Connector	CDE3105
	6	Connector	CkS1710		36	Cap	CNV2680
	7	Connector	CkS1771		37	Holder	CNC3566
	8	Screw	CBA1142		38	Plug	CKS1224
	9	Remote Control Assy	CXA4105		39	Plug	CKS-568
	10	Battery Cover	CNS2224		40	Connector	CKS1993
◉	11	Tuner Amp Unit	CWM2617		41	Connector	CKS1990
	12	Knob	CAA1250		42	Plug	CKS1982
	13	Screw	BMZ30P140FMC		43	Plug	CKS1979
	14	Heat Sink	CNC3562		44	Plug	CKS1315
	15	Volume	CCS1187		45	Plug	CKS1729
	16	IC	TA8215H-A	◉	46	FM/AM Tuner Unit	CWE1225
	17	Holder	CNC3563		47	Insulator	CNM2105
	18	Cord	CDE3292		48	Antenna Jack	CKX1010
	19	Holder	CNC3564		49	FM Front End	CWB1035
	20	Screw	BMZ30P050FMC		50	Plug	CKS1628
	21	IC	TA8214K		51	Holder	CNC3395
	22	Plug	CKS-467		52	DIN Connector Cord	CDE3107
	23	Plug	CKS1299		53	Antenna Cable	CDH1093
	24	Clamper	CNV1335		54	Cord Assy	CDE3111
	25	Plug	CKS1049		55	Resistor	RS1/2P102JL
	26	Plug	CKS1318		56	Cap	CNS1472
	27	Plug	CKS1881		57	Case	CNS2269
	28	Insulator	CNM2931		58	Holder	CNC3342
	29	Screw	BMZ30P100FMC				

● Chassis



● Chassis

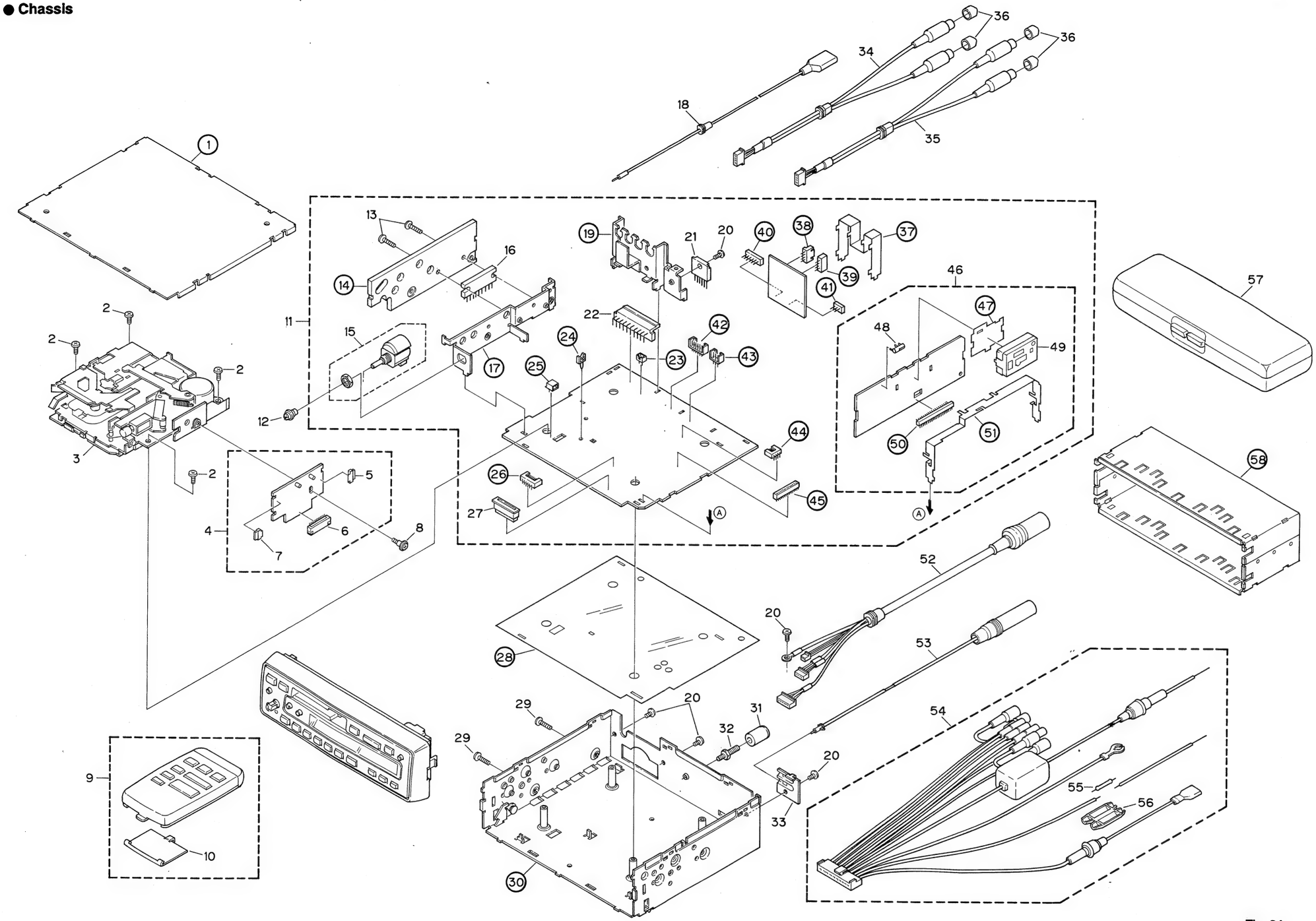


Fig. 24

16. CASSETTE MECHANISM ASSY EXPLODED VIEW

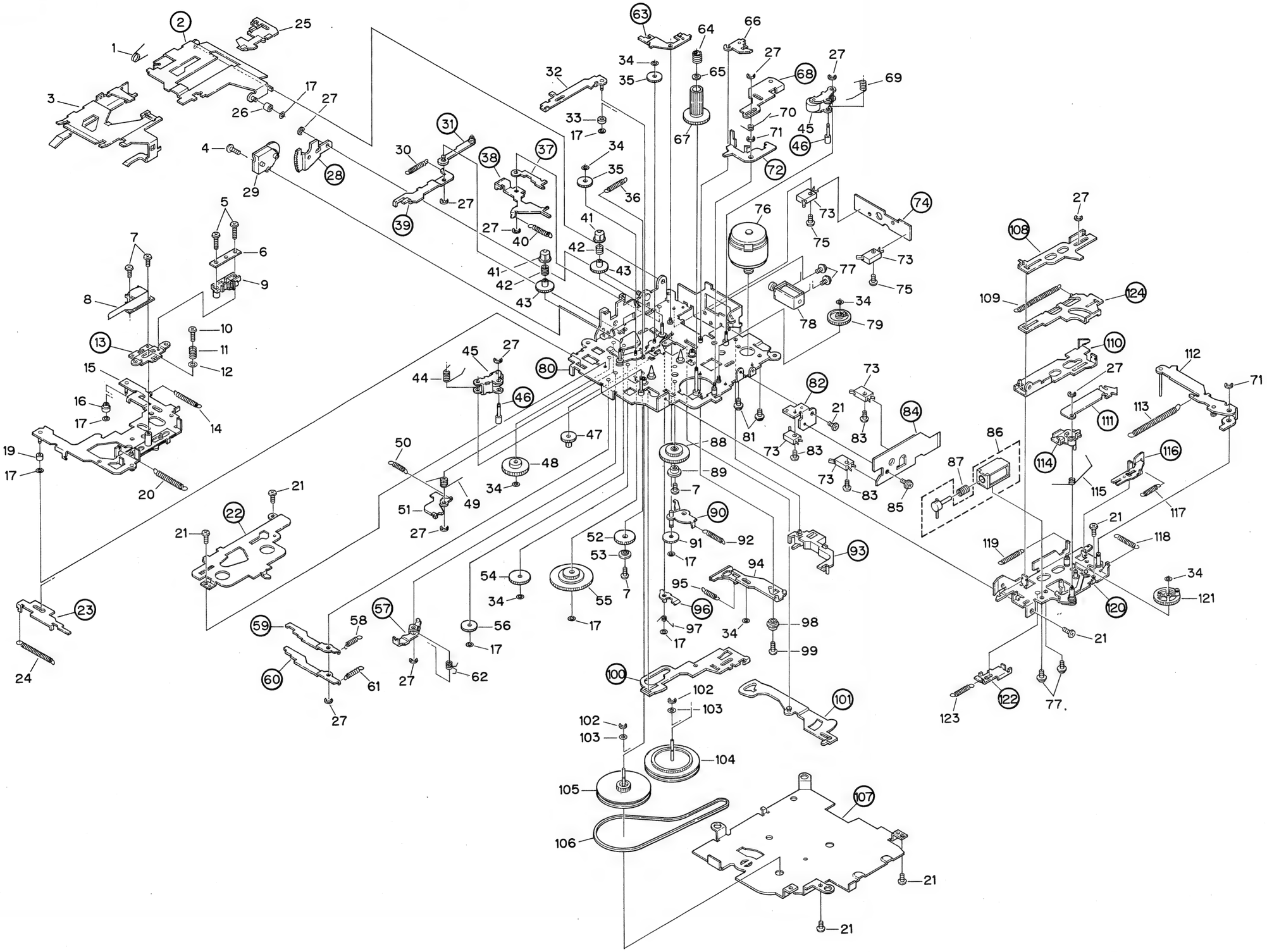


Fig. 25

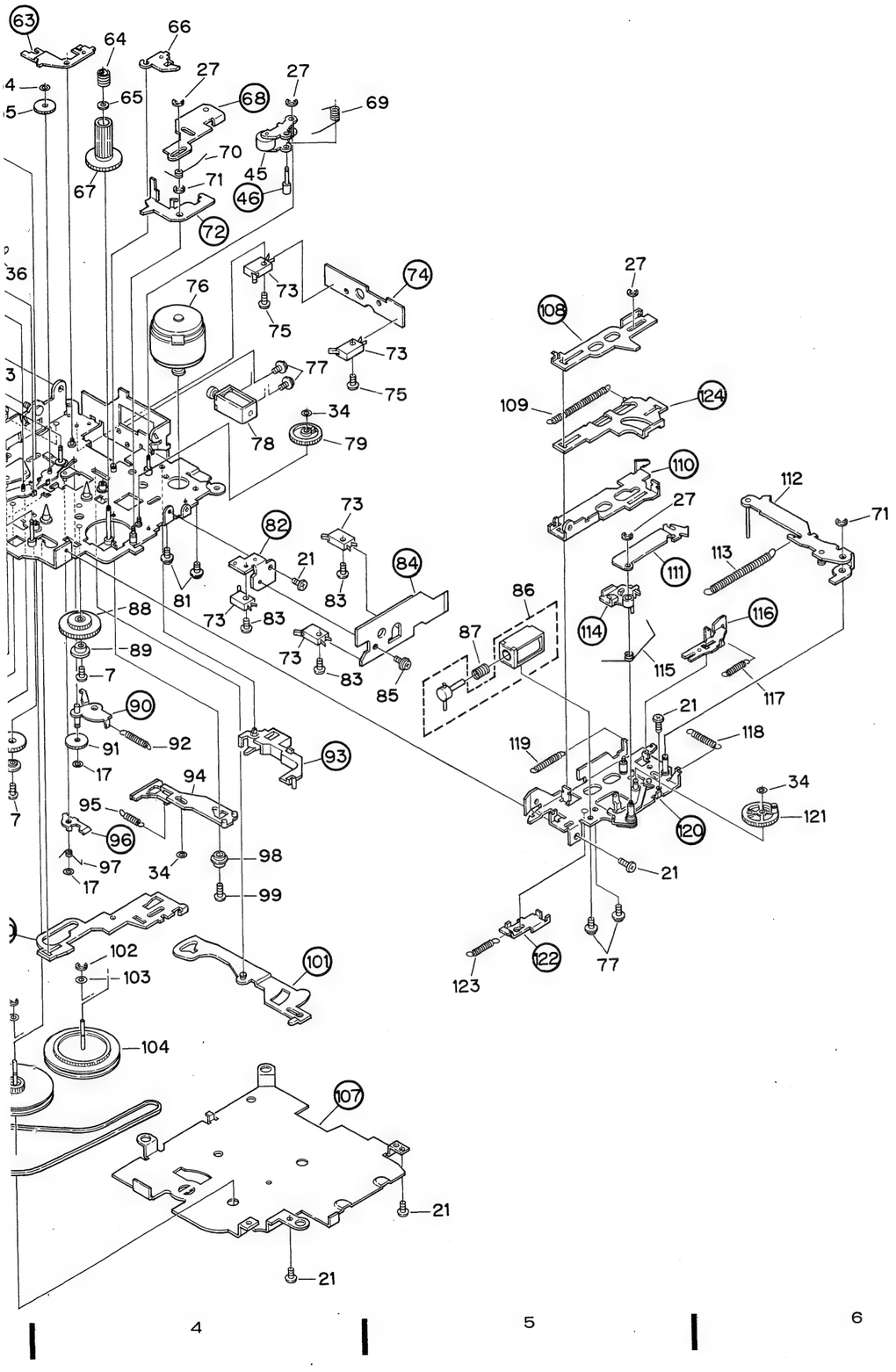


Fig. 25

● Parts List

Mark No.	No.	Description	Part No.
	1	Spring	EBH1121
	2	Arm Unit	EXA1132
	3	Cassette Holder	ENC1165
	4	Screw	CBA1070
	5	Screw	EBA1016
	6	Spring	EBL1011
	7	Screw	HBA-175
	8	Head Unit (KEH-M650/US, KEH-M8250/CA)	EXA1087
		Head Unit (KEH-M8200/US, KEH-M8250/ES)	EXA1084
	9	Spacer	ENV1136
	10	Screw	BMZ20P025FMC
	11	Spring	EBH1145
	12	Washer	EBE1005
	13	Arm	ENC1155
	14	Spring	EBH1187
	15	Head Base Unit	EXA1115
	16	Roller	ELA1147
	17	Washer	CBF1037
	18	·····	
	19	Roller	ELA1146
	20	Spring	EBH1131
	21	Screw	BMZ20P030FMC
	22	Cover	ENC1166
	23	Lever	ENC1159
	24	Spring	EBH1183
	25	Lever	ENV1124
	26	Roller	ELA1148
	27	Washer	YE15FUC
	28	Arm	ENC1174
	29	Damper Unit	CXA3242
	30	Spring	EBH2007
	31	Lever Unit	EXA1079
	32	Lever Unit	EXA1074
	33	Roller	ELA1149
	34	Washer	CBF1038
	35	Gear	ENV1134
	36	Spring	EBH1139
	37	Arm	ENC1170
	38	Arm	ENC1148
	39	Arm	ENC1147
	40	Spring	EBH1186
	41	Collar	ENV1117
	42	Spring	EBH1155
	43	Gear	ENV1116
	44	Spring	EBH1190
	45	Pinch Roller Unit	EXA1043
	46	Shaft	ELA1129
	47	Gear	ENV1113
	48	Gear	ENV1111
	49	Spring	EBH1138
	50	Spring	EBH1142
	51	Arm	ENV1138
	52	Gear	ENV1109
	53	Collar	ELA1161
	54	Gear	ENV1110
	55	Gear Unit	EXA1083
	56	Gear	ENV1112
	57	Arm Unit	EXA1075
	58	Spring	EBH2002
	59	Arm	ENC1152
	60	Arm	ENC1151
	61	Spring	EBH1136
	62	Spring	EBH2003
	63	Arm	ENC1149
	64	Spring	EBH1182
	65	Washer	HBF-120
	66	Arm	ENV1121
	67	Gear	ENV1142
	68	Lever Unit	EXA1078
	69	Spring	EBH1189
	70	Spring	EBH1153
	71	Washer	YE20FUC
	72	Arm	ENC1150
	73	Switch	CSN1005
	74	P.C.Board	ENP1023
	75	Screw	CBA-172
	76	Motor Unit	EXA1089
	77	Screw	PMS20P022FUC

Mark	No.	Description	Part No.
	78	Solenoid	EXP1009
	79	Gear	ENV1106
	80	Chassis Unit	EXA1131
	81	Screw	PMS20P025FMC
	82	Bracket	ENC1163
	83	Screw	CBA1070
	84	P.C.Board	ENP1021
	85	Screw	CBA1076
	86	Solenoid	EXP1004
	87	Spring	EBH1157
	88	Gear	ENV1108
	89	Collar	ELA1151
	90	Arm Unit	EXA1076
	91	Gear	ENV1114
	92	Spring	EBH1141
	93	Clamper	ENV1140
	94	Arm Unit	EXA1090
	95	Spring	EBH1169
	96	Arm	ENC1153
	97	Spring	EBH1140
	98	Collar	ELA1162
	99	Screw	JFZ20P045FNI
	100	Lever	ENC1158
	101	Arm Unit	EXA1099
	102	E Type Washer	CBG1003
	103	Washer	HBF-179
	104	Flywheel	ENV1128
	105	Flywheel	ENV1127
	106	Belt	ENT1014
	107	Cover	ENC1167
	108	Lever	ENC1164
	109	Spring	EBH1147
	110	Lever	ENC1160
	111	Arm	ENC1156
	112	Arm Unit	EXA1111
	113	Spring	EBH1135
	114	Clamper	ENV1141
	115	Spring	EBH1151
	116	Lever	ENC1171
	117	Spring	EBH1149
	118	Spring	EBH1146
	119	Spring	EBH1148
	120	Guide Unit	EXA1100
	121	Gear	ENV1118
	122	Arm	ENC1157
	123	Spring	EBH1158
	124	Lever	ENC1161

17. PACKING METHOD

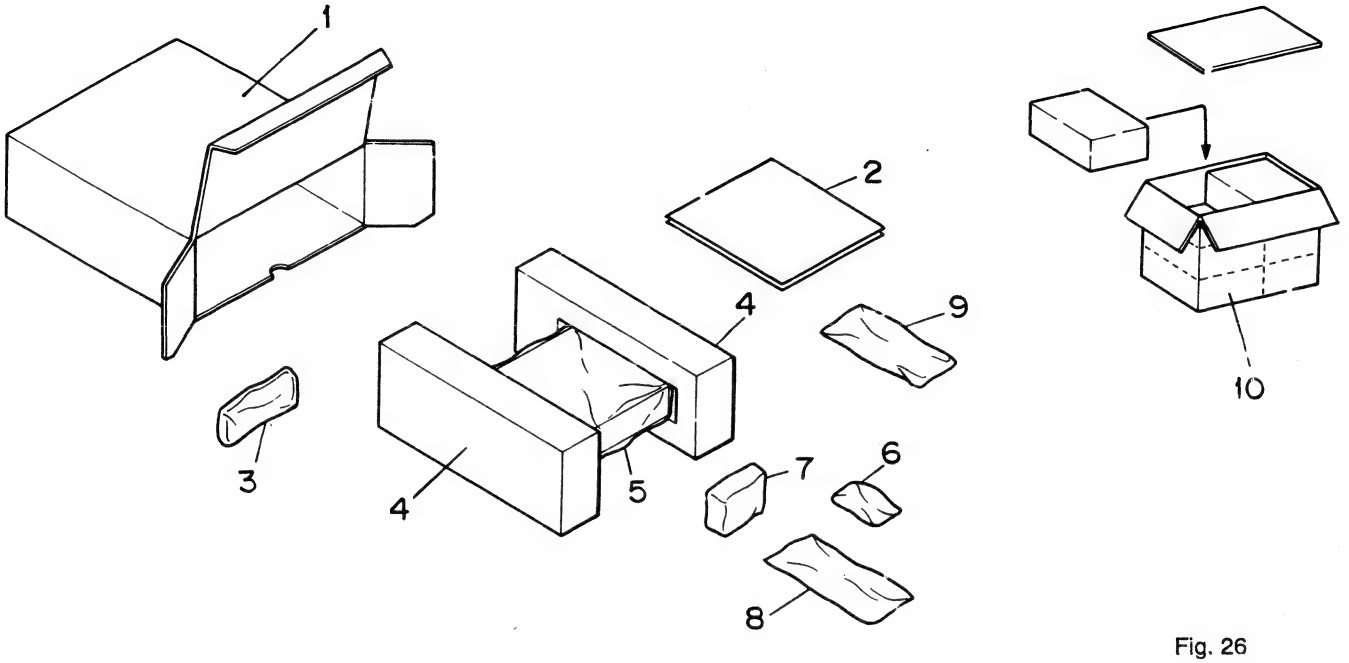


Fig. 26

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*

● Parts List (KEH-M650/US)

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Carton	CHG1970	8	Case	CNS2269
2-1	Owner's Manual	CRB1215	9	Accessory Assy	CEA1633
2-2	Card		9-1	Screw(×1)	CBA-102
2-3	Caution Card		9-2	Screw(×1)	CBA1002
3	Cord Assy	CDE3111	9-3	Cord	CDE1289
4	Styrofoam	CHP1351	9-4	Handle(×2)	CNC3664
5	Cover	CEG1092	9-5	Strap	CNF-111
6	Accessory Assy	CEA1473	9-6	Bush	CNV1009
6-1	Fastener(Rough)	CNM1716	9-7	Nut(×2)	NF50FMC
6-2	Fastener(Soft)	CNM1717	10	Contain Box	CHL1970
6-3	Battery				
7	Remote Control Assy	CXA4105			
7-1	Battery Cover	CNS2224			

Mark No.	Description	KEH-M650 /US Part No.	KEH-M8200 /US Part No.	KEH-M8250 /CA Part No.	KEH-M8250 /ES Part No.
1	Carton	CHG1970	CHG1969	CHG1971	CHG1972
* 2-1	Owner's Manual	CRB1215	CRB1214	CRD1465	CRD1466
2-2	Card				
9	Contain Box	CHL1970	CHL1969	CHL1971	CHL1972

* 2-1 Owner's Manual

Part No.	Model	Language
CRB1215	KEH-M650/US	English
CRB1214	KEH-M8200/US	English
CRD1465	KEH-M8250/CA	English, French
CRD1466	KEH-M8250/ES	English, French, Spanish, Arabic

18. ELECTRICAL PARTS LIST

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

Chip Resistor

RS1/8S □□□J, RS1/10S □□□J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

Unit Number :
Unit Name : FM/AM Tuner Unit (KEH-M650/US, KEH-M8200/US, KEH-M8250/CA)

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
IC	51		PA4012B
IC	201		PA4017
Q	1	Chip Transistor	2SB709
Q	2	Chip Transistor	DTC124EK
Q	3	Chip Transistor	2SA1162
Q	201		2SK435
Q	202		2SC2412K
Q	203 205	Chip Transistor	DTC124EK
D	11 12	Chip Diode	1SV128A-BB
D	201 204	Chip Diode	MA157-MR
D	205		SVC203-M1
L	1 51	Inductor	CTF1241
L	11 12	Inductor	CTF1065
L	101	Inductor	CTF1170
L	201	Ferri-Inductor	CTF1026
L	203	Ferri-Inductor	LAU220K
L	204	Ferri-Inductor	LAU470K
L	205	Ferri-Inductor	LAU4R7K
T	51	Coil	CTE1021
T	52	Coil	CTE1022
T	201	Coil	CTB1020
T	202	Coil	CTB1004
T	203	Coil	CTB1040
T	204	Coil	CTE1037
T	205	Coil	CTE1038
T	206	Coil	CTE1039
CG	1	Surge Protector	DSP-201M
CF	51 52	Ceramic Filter	CTF-182
CF	201	Ceramic Filter	CTF1041
CF	202	Filter	CTF1085
X	151	Ceramic Resonator	CSS1055
X	201	Crystal Resonator	CSS1014
VR	1	Semi-fixed 100kΩ (B)	CCP1025
VR	51 101 102	Semi-fixed 33kΩ (B)	VRTB4VS333
		FM Front End	CWB1035

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
R	2 7		RS1/10S223J
R	3		RS1/10S683J
R	4		RS1/10S682J
R	5 63		RS1/10S0R0J
R	6 59		RS1/10S331J
R	8		RS1/10S331J
R	9 58		RS1/10S223J
R	10 14		RS1/10S0R0J
R	11		RS1/10S104J
R	12		RS1/10S470J
R	15		RS1/10S0R0J
R	54		RS1/10S472J
R	56 104		RS1/10S393J
R	57		RS1/10S562J
R	64		RS1/10S222J
R	101		RS1/10S471J
R	102		RS1/10S822J
R	105		RS1/10S332J
R	106		RS1/10S333J
R	107		RS1/10S102J
R	108		RS1/10S104J
R	111		RS1/10S123J
R	112		RS1/10S684J
R	151 152		RS1/10S152J
R	153		RS1/10S222J
R	201		RS1/10S220J
R	202		RS1/10S681J
R	203 206 214		RS1/10S222J
R	204 213		RS1/10S473J
R	205 209		RS1/10S470J
R	207		RS1/10S822J
R	208 211 212		RS1/10S103J
R	210		RS1/10S682J
R	215		RS1/10S153J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
C	1		CKSQYB102K50
C	2 3 104		CKSQYB103K50
C	4 59		CKSQYF473Z25
C	11 12 13 14		CCSQCH220J50
C	15		CKSQYB223K25
C	51		CKSQYF473Z25
C	52 53		CKSQYB223K25
C	54		CCSQSL101J50
C	55		CKSQYB102K50
C	56		CKSQYF104Z25
C	57		CEAR68M50LS2
C	58		CCSQCH060D50
C	60		CEALNP100M6R3
C	101		CKSQYB392K50
C	102		CKSQYB682K50
C	103		CKSQYB392K50
C	105		CEA2R2M50LL
C	106		CEA220M6R3LL
C	107 108		CKSQYB222K50
C	110		CEA010M50LL
C	111		CEA100M16LL
C	112		CEA0R1M50LL
C	151 152		CKSQYB563K25
C	153		CSZAR47M35L
C	154 155 156		CEA3R3M50LL
C	157		CEA101M10LS
C	201 223 228		CKSQYB103K25
C	202 212		CKSQYB332K50
C	203 215 216 219 226		CKSQYF473Z25
C	204 208 210		CKSQYB223K25
C	205		CCSQCH220J50
C	206 207		CCSQCH820J50
C	211		CEA2R2M50LL
C	213		CCSQCH390J50
C	217		CEA100M16LL
C	218		CEA2R2M35NPLL
C	220		CCSQCH430J50
C	221		CCSQCH100D50
C	222		CSZA010K35L
C	224		CEA470M16LL
C	225		CKSQYB333K25
C	227		CEA4R7M35LS
C	229		CEA470M16LS
C	230		CEA220M16LL

FM/AM Tuner Unit		KEH-M650/US KEH-M8200/US KEH-M8250/CA	KEH-M8250/ES
Mark	Circuit Symbol & No.	Part No.	Part No.
Q3		2SA1162	·····
D11, 12		1SV128A-BB	·····
L11, 12	Inductor	CTF1065	·····
L101	Inductor	CTF1170	CTF1126
VR1	Semi-fixed	CCP1025 100kΩ (B)	CCP1019 10kΩ (B)
R3		RS1/10S683J	RS1/10S124J
R8		RS1/10S331J	·····
R9		RS1/10S223J	·····
R11		RS1/10S104J	·····
R12		RS1/10S470J	·····
R13		·····	RS1/10S0R0J
R58		RS1/10S223J	RS1/10S393J
C11, 12, 13, 14		CCSQCH220J50	·····
C15		CKSQYB223K25	·····
C57		CEAR68M50LS2	CSZAR33K35

Unit Number :
Unit Name : Deck Unit (KEH-M650/US, KEH-M8250/CA)

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
IC	251		BA3430FS
IC	301		HA12161FP
Q	251 281	Chip Transistor	2SC4116
Q	282 284 286	Chip Transistor	2SB1441JU
Q	283 285	Chip Transistor	2SC3295
Q	301		FMG9
VR	301 302	Semi-fixed 33kΩ (B)	CCP1076

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
R	251 252 253 254		RS1/10S273J
R	255 256 401		RS1/10S181J
R	257 258		RS1/10S334J
R	259 260		RS1/10S133J
R	261 262		RS1/10S183J

Mark	Circuit Symbol & No.	Part Name	Part No.
R	263		RS1/10S473J
R	264		RS1/10S333J
R	265 266		RS1/10S224J
R	281		RS1/10S472J
R	282 288 293		RS1/10S473J
R	283 284 285 289 290 294 295		RS1/8S221J
R	286 291 296		RS1/10S103J
R	287 292 307		RS1/10S103J
R	301 302 306 308		RS1/10S223J
R	303 304		RS1/10S561J
R	305		RS1/10S183J
R	309		RS1/10S682J
R	402		RS1/10S270J
R	403		RS1/10S823J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
C	251 252 253 254		CCSQCH331J50
C	255 256	22μF/6.3V	CCH1065
C	257 258		CKSQYB103K50
C	259 260 313	1μF/50V	CCH1072
C	261	100μF/6.3V	CCH1067
C	262		CKSYB103K50
C	281 282	4.7μF/25V	CCH1064
C	301 302	0.47μF/50V	CCH1073
C	303 304 305 306 307 308		CKSQYB222J50
C	309 310 311 312		CKSYB104K25
C	314		CKSYB103K50
C	401		CKSQYB152K50
C	402 404		CKSYB104K25
C	403	6.8μF/25V	CCH1066

Deck Unit	KEH-M8200/US KEH-M8250/CA	KEH-M8200/US
Mark Circuit Symbol & No.	Part No.	Part No.
R251, 252, 253, 254	RS1/10S273J	RS1/10S104J
C251, 252, 253, 254	CCSQCH331J50	CKSQYB681K50

Unit Number :
Unit Name : Deck Unit(KEH-M8250/ES)

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
IC	251		BA3430FS
IC	301		HA12134FP
Q	251 281	Chip Transistor	2SC4116
Q	282 284 286	Chip Transistor	2SB1441JU
Q	283 285	Chip Transistor	2SC3295
Q	301		DTC143EK
VR	301 302	Semi-fixed 33kΩ (B)	CCP1076

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
R	251 252 253 254		RS1/10S104J
R	255 256 401		RS1/10S181J
R	257 258		RS1/10S334J
R	259 260		RS1/10S133J
R	261 262		RS1/10S183J

Mark	Circuit Symbol & No.	Part Name	Part No.
R	263		RS1/10S473J
R	264		RS1/10S333J
R	265 266		RS1/10S224J
R	281		RS1/10S472J
R	282 288 293		RS1/10S473J
R	283 284 285 289 290 294 295		RS1/8S221J
R	286 291 296		RS1/10S103J
R	287 292		RS1/10S103J
R	306 308		RS1/10S223J
R	305		RS1/10S183J
R	402		RS1/10S270J
R	403		RS1/10S823J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
C	251 252 253 254		CKSQYB681K50
C	255 256	22μF/6.3V	CCH1065
C	257 258		CKSQYB103K50
C	259 260 313	1μF/50V	CCH1072
C	261	100μF/6.3V	CCH1067
C	262		CKSYB103K50
C	281 282	4.7μF/25V	CCH1064
C	301 302	0.47μF/50V	CCH1073
C	314		CKSYB103K50
C	401		CKSQYB152K50
C	402 404		CKSYB104K25
C	403	6.8μF/25V	CCH1066

Unit Number :
Unit Name : Tuner Amp Unit(KEH-M650/US, KEH-M8200/US, KEH-M8250/CA)

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
IC	401		PD4307A
IC	402		S-80734AN-DY
IC	501		LC7218M
IC	601		TA8214K
IC	701		RC4558MD
IC	702		UPC4570G
IC	707		HFE701F008X2
IC	801		TA8215H-A
IC	852 853		RC2068MD1
Q	401 402	Chip Transistor	2SA1162
Q	403 619	Chip Transistor	DTC114EK
Q	404	Chip Transistor	DTC144EK
Q	501		2SC2498
Q	502		DTC124ES
Q	503 504 506 703 704		2SC2458
Q	505		2SC3113
Q	507		2SK330
Q	601 603 608 616 622		2SB1243
Q	602 605 610 719	Chip Transistor	2SC2712
Q	604 609		DTC114ES
Q	611 618		2SD1859
Q	615		2SD2037
Q	617 712 723		DTC143ES
Q	620	Chip Transistor	2SA1036K
Q	621	Chip Transistor	DTC143EK

Mark	Circuit Symbol & No.	Part Name	Part No.
Q	623 631	Chip Transistor	DTC144EK
Q	624 625		2SB1243
Q	626	Chip Transistor	DTC143TK
Q	632		DTA143EK
Q	701 702 705 706		DTC343TS
Q	709 710 717 718	Chip Transistor	DTC343TK
Q	711		DTA114ES
Q	713	Chip Transistor	DTA143EK
Q	720	Chip Transistor	2SA1162
Q	721	Chip Transistor	DTC124EK
Q	722	Chip Transistor	DTA114EK
Q	853 854 855 856	Chip Transistor	DTC343TK
D	401 402 403 404 501 502 503 504 508		1SS176
D	506 613	Chip Diode	MA151WK-MT
D	509		RD3R0ESB2
D	601		ERC04-02
D	602		HZS7A1L
D	604 605 607		ERA15-02VH
D	606		HZS7C2L
D	608		HZS6B1L
D	611		HZS9C2L
D	612		HZS6C1L
D	701 703		1SS176
D	702		HZS5ALL
D	704	Chip Diode	MA151WA-MN
D	705		HZS9R1JB3
D	706 852 853	Chip Diode	MA151WK-MT
L	401	Ferri-Inductor	LAU150K
L	402	Ferri-Inductor	LAU2R7K
L	501 502	Ferri-Inductor	LAU1R0M
L	503	Ferri-Inductor	LAU2R2M
L	601	Coil	CTF1135
L	602 603	Ferri-Inductor	CTF1202
TC	401	Trimmer	CCG1002
IB	401		CWW1329
IB	402		CWW1147
IB	403		CWW1322
IB	404		CWW1323
IB	405		CWW1306
IB	406		CWW1302
IB	407		CWW1301
IB	408		CWW1321
X	401	Crystal Resonator	CSS1023
X	501	Crystal Resonator	CSS1030
SW	401	Switch	CSG1020
VR	801	Volume 200Ω (P)	CCS1187
EF	601	EMI Filter	CCG1006
BZ	401	Buzzer	CPV1012
		FM/AM Tuner Unit	

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
R	401 526		RS1/10S681J
R	402 423 424 425 426 441 442 527 528 529		RS1/10S681J
R	403 404 405 406 407 408 409 427 428 430		RS1/10S102J
R	410 411 421 433 438 439 440 448 451		RS1/10S473J
R	412 432 518		RS1/10S104J
R	413		RS1/8S472J
R	414		RS1/8S474J
R	415		RS1/8S103J
R	416		RS1/8S473J
R	417 418 419 420		RS1/8S103J
R	422 733 734		RS1/10S223J
R	431		RS1/10S104J
R	434 452 727 728		RS1/10S473J
R	435 443 501 503 514 633 635 729		RS1/10S103J
R	436		RD1/4PS202JL
R	437 450 504 521 531 709 710		RS1/10S102J
R	453 455		RS1/10S473J
R	456		RS1/10S101J
R	502 505 507 515 516 522 525 532 602 618		RS1/10S472J
R	506 613		RD1/4PS103JL
R	508		RS1/10S331J
R	509		RS1/10S182J
R	510 512		RS1/10S101J
R	511		RS1/10S821J
R	513 523 524 612 615 626 631 707 708		RS1/10S473J
R	517 730		RS1/10S222J
R	519		RS1/10S221J
R	520		RS1/10S474J
R	530 711 712 763 764		RS1/10S152J
R	601		RS1/10S103J
R	603 606 614		RD1/4PS102JL
R	604 737 738 739 765		RS1/10S472J
R	605		RD1/4PS472JL
R	616 630 768		RS1/10S472J
R	617		RD1/4PS220JL
R	619		RS1/8S1R0J
R	625		RD1/4PS681JL
R	627 629 632 648 701 702 703 704 731 732		RS1/10S472J
R	628 636		RD1/4PS222JL
R	634		RD1/4PS152JL
R	637		RS1/10S103J
R	638		RD1/4PS272JL
R	643 779 780		RS1/10S0R0J
R	650		RS1/10S183J
R	651 652 653 654		RS1/10S1R0J
R	705 706 782		RS1/10S563J
R	713 714		RS1/10S473J
R	715 716		RS1/10S203J
R	723 724		RS1/10S681J
R	725 726		RS1/10S393J
R	735 736		RS1/10S124J
R	753 754		RS1/10S471J
R	761 762		RS1/10S332J
R	766		RS1/10S393J
R	767		RD1/4PS391JL
R	801 802		RS1/10S431J
R	803 804 805 806		RD1/4PS4R7JL
R	865 866 873 874 877 878 885 886		RS1/10S102J
R	867 868 879 880		RS1/10S562J
R	869 870 881 882		RS1/10S272J
R	871 872 883 884		RS1/10S472J
R	875 876 887 888		RS1/10S473J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
C	401		CCSQCH330J50
C	402		CEA2R2M50L2
C	403 503 514 520 731 732		CKSQYB102K50
C	404 409 502 504 515 604		CKSQYB473K25
C	405		CEA100M16LS2

Mark	Circuit Symbol & No.	Part Name	Part No.
C	406 407 733		CEA010M50LS2
C	408		CKSQYB104K25
C	410		CKSQYB103K50
C	501 507 508 509 511 512 513 518 602		CKSQYB103K50
C	505 510		CCSQCH101J50
C	506		CKSQYB561K50
C	516 517		CCSQCH270J50
C	519	4.7μF/16V	CCH1005
C	601		CKSYB473K25
C	605	2200μF/16V	CCH-123
C	606 607		CEA220M6R3LS
C	608		CEA101M16L2
C	609		CEA101M10L2
C	610		CEA331M16L2
C	611		CEA220M16L2
C	612 710		CEA101M10LS
C	613 614 615 616		CEA470M16L2
C	617		CKSYB104K25
C	701 702 703 704 707 708 709 711 712		CEA4R7M35LS
C	713 714		CCSQCH180J50
C	725 726		CEA4R7M35LS
C	729 730 743		CEHAQ4R7M50
C	734 801		CEHAQ101M10
C	735		CKSQYB104K25
C	736		CEHAS100M16
C	803		CEHAQ470M25
C	804		CEHAS470M16
C	805	4700μF/16V	CCH1068
C	807 808 809 810		CQEA224J63
C	863 864 867 868 877 878 879 880		CCSQCH101J50
C	865 866 871 872 875 876 883 884		CEA101M10LS
C	869 870 881 882		CEA100M16LS2
C	874 886		CKSQYB103K50

Tuner Amp Unit	KEH-M650/US KEH-M8200/US KEH-M8250/CA	KEH-M8250/ES
Mark Circuit Symbol & No.	Part No.	Part No.
Q632	DTA143EK	*****
D403, 404	1SS176	*****
D613	MA151WK-MT	*****
FM/AM Tuner Unit		
R427, 428, 430, 450	RS1/10S102J	*****
R456	RS1/10S101J	*****
R650	RS1/10S183J	*****
R703, 704	RS1/10S472J	*****

Unit Number :
Unit Name : Display Unit

MISCELLANEOUS

Mark	Circuit Symbol & No.	Part Name	Part No.
IC	901		LC7582A
IC	902		PD4285
IC	903		BX-1393
IC	904		S-80740AH
Q	901	Chip Transistor	2SC2712
Q	902	Chip Transistor	DTC144EK
D	901 902 903 904 905	Chip Diode	MA143-MC
D	906	Chip Diode	RB717F-3E
L	901	Ferri-Inductor	LAU101K
X	901		CSS1069
SW	1 2 3 4 5 6 7 8	Switch	CSG1044
SW	9 10 11 12 13 14 15 16	Switch	CSG1044
SW	17 18 19	Switch	CSG1044
IL	901 902 908	Lamp 14V 40mA	CEL1025
IL	903 904 909 913	Lamp 14V 40mA	CEL-147
IL	905 906 907	Lamp 115mA 50V	CEL1205
IL	910 911 912	Lamp 115mA 50V	CEL1204
		LCD	CAW1133

RESISTORS

Mark	Circuit Symbol & No.	Part Name	Part No.
R	901 902 903 904 905		RS1/8S103J
R	906		RS1/10S223J
R	907		RS1/10S104J
R	908		RS1/10S470J
R	909 910		RS1/10S473J
R	911		RS1/10S103J
R	912 913 914 915 916 917 918 919 920 921		RS1/10S471J
R	922 923		RS1/10S0R0J

CAPACITORS

Mark	Circuit Symbol & No.	Part Name	Part No.
C	904		CKSQYB331K50
C	905 907 910		CKSQYB103K50
C	906		CEA470M6R3LS
C	908 909		CCSQCH221J50
C	911 912 913 914 915		CKSQYB152K50

Unit Number :
Unit Name : Connector P.C.Board

Mark	Circuit Symbol & No.	Part Name	Part No.
D	1 2		F1SR35-100A
S	1 2 3	Switch(LOAD, END, F/R)	CSN1005

Unit Number :
Unit Name : Switch P.C.Board

Mark	Circuit Symbol & No.	Part Name	Part No.
S	1 2	Switch(METAL, PLAY)	CSN1005

Miscellaneous Parts List

Mark	Circuit Symbol & No.	Part Name	Part No.
SW	402	Switch(Detach)	CSN1007
HD	1(KEH-M650/US, KEH-M8250/CA)	Head Unit	EXA1087
HD	1(KEH-M8200/US, KEH-M8250/ES)	Head Unit	EXA1084
M	1	Motor Unit	EXA1089
SO	1	Solenoid	EXP1009
SO	2	Solenoid	EXP1004